

EXAMINING INVASIVE SPECIES POLICY

HEARING

BEFORE THE
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THE INTERIOR
OF THE
COMMITTEE ON OVERSIGHT
AND GOVERNMENT REFORM
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EXAMINING INVASIVE SPECIES POLICY

Tuesday, December 1, 2015

HOUSE OF REPRESENTATIVES
SUBCOMMITTEE ON THE INTERIOR
COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
Washington, D.C.

The subcommittee met, pursuant to call, at 2:36 p.m., in Room 2154, Rayburn Office Building, Hon. Cynthia Lummis [chairman of the subcommittee] presiding.

Present: Representatives Lummis, Gosar, Buck, Palmer, Lawrence, and Plaskett.

Also present: Representative Hurd.

Ms. LUMMIS. The subcommittee will come to order. Without objection, the chair is authorized to declare a recess at any time.

Today the Subcommittee on the Interior will examine the problem of invasive species in the U.S., and the effectiveness of the Federal government's attempts to control and eradicate invasives. The U.S. Fish and Wildlife Service specifically defines an invasive species as an exotic species whose introduction into an ecosystem in which the species is not native causes or is likely to cause environmental or economic harm or harm to human health. There are currently almost 50,000 such species living in the United States today. We promise there will not be a test on how many of those you can name.

The impact of invasive species is hard to ignore. They are one of the leading causes of population decline and extinction in native plants and animals. They cause billions of dollars per year in damages across the country. Recently the Department of the Interior estimated that it spends \$100,000 million annually on invasive species management.

In response to this significant and growing problem, President Clinton created the National Invasive Species Council in 1999. This Council is co-chaired by the Secretaries of Interior, Agriculture, and Commerce. Its mission is to coordinate the work of numerous agencies to address and eradicate invasive species.

Part of the Council's job is to produce a national management plan every two years for the treatment and eradication of endangered species. Since 1999, the Council has only released two plans, one in January 2001 and nearly 8 years later in 2008. A review of the 2001 plan by the Government Accountability Office found problems with coordination, delays, and setting clear long-term goals.

In the past several years, there has been relatively little oversight of the Council's work and success in managing the invasive species problem. Questions continue to be raised about whether the

Council and other Federal agencies are effectively treating certain invasive species.

The spread of these nuisances is startling. Two years ago, Dr. George Beck testified before the House Committee on Natural Resources about the inefficiencies and ineffectiveness of the Council and the Federal government in treating invasive weeds. Dr. Beck warned that invasive weeds were spreading at a far faster pace than they were being eradicated. He questioned the government's claims about the amount of land infested with non-native weeds that it successfully treated in previous years. He also cast doubts on whether the Council was using the most cost-effective means of fighting invasive species. This hearing will allow the Council to update us on its progress.

In addition, we will look at the impact of three invasive species that have caused significant and costly headaches for my home State of Wyoming as well as Ranking Member Lawrence's home State of Michigan. Mr. Hurd will also raise some issues in his district in Texas. The nuisance and dangers of these particular non-native species provides startling illustrations of the harmful effects of endangered species and the need for capable treatment efforts.

Our witnesses today bring a broad and diverse knowledge of invasive species and the havoc they wreak on our country. We will hear from the executive director of the Council on its work. We will also hear from three experts who have studied the risks of invasive species in America, and can provide insight into the importance and urgency of addressing this issue.

As the problem of invasive species in America worsens, we must continue to revisit and reassess the situation and our treatment and eradication efforts. I look forward to the hearing, and I look forward to our witnesses' testimony, and I want to thank you for being here today.

I also want to thank the ranking member, Ms. Lawrence, for being the impetus and driving force behind holding this hearing today. And I now recognize Ms. Lawrence, the ranking member of the Subcommittee on the Interior, for her opening statement.

Ms. LAWRENCE. I want to say that it is a pleasure, Madam Chairman. I thank you for helping me bring this issue forward and for your leadership. I want to thank all the witnesses here today for appearing, and I look forward to hearing your testimony.

You have heard some of the statistics that I am sure, the witnesses, you are very familiar with. One of the concerns we have is that what is our plan. The amount of money that we are paying to address invasive species to me should not be spent without a comprehensive plan. I recognize that, Dr. Reaser, you are new, and so we are looking forward to hearing what your vision and what the plan is.

Invasive species pose serious problems to our environment, and we understand that, but it is also a significant challenge to the conservation of native fish and wildlife. No habitat or region is immune from the threat of invasive species. As our chair mentioned, we spend over \$125 billion each year controlling these plants and animals and repairing the damage they inflict on our property and our natural resources.

As we talk about our environment, you cannot leave out the impact that invasive species has. In Michigan, I want to talk about that, and one of the reasons why this is so important to me, zebra mussels are a serious economic threat to our recreational fishing and commercial activity in the Great Lakes. And we in Michigan are passionate about our Great Lakes and our water, and so when you start seeing the impact of these invasive species, this rises to a level of being a very serious concern.

The zebra mussels alone has caused more than \$1 billion in damage by clogging the pipes and the filtration equipment of municipalities and industrial water systems. They have also damaged boats and decks, and it costs Michigan more than \$250 million a year to clean those affected pipes and machinery. We are also facing a threat from the Asian carp, which can devastate recreational fishing if not controlled.

According to the University of Michigan Sea Grant Institute, recreational and commercial fisheries contribute in excess to \$4 to \$7 billion to the economy each year. Recent reports show that these invasive fish have already caused significant problems in our Ohio and Mississippi River Basins.

Only a few weeks ago, the Michigan Department of Environmental Quality and the Department of Natural Resources confirmed the existence of two new invasive species in water, and in 2014 the Administration reports it allotted an estimated \$2.3 billion across the range of Federal agencies and activities to control and eradicate these species. I recognize that this issue requires a long-term plan, and that is what I want to hear today. Also I understand that scientists are working around the clock to create a remedy for this problem.

Since the plan has not been revised since 2008, even though the regulations, it is required to issue and update every 2 years, one of the things that I am looking for is a commitment for compliance, and that is something that as part of this committee I will be looking for in the future.

While we have not updated our plan, we know that the invasive species problem has worsened, and I feel strongly that a lack of a comprehensive plan on how to deal with this is contributing to the impact. I hope to get some answers today on this issue so that important safeguards can put into place to manage this ever-increasing problem of invasive species.

Thank you, Madam Chair.

Ms. LUMMIS. I thank the ranking member. I will hold the record open for 5 legislative days for any member who would like to submit a written statement.

Ms. LUMMIS. The chair also notes the presence of the gentleman from Texas, as I mentioned earlier, Mr. Hurd, a member of the full committee. We thank you very much for your interest in the topic today. And without objection, we welcome Mr. Hurd to participate fully in today's hearing.

We now recognize our panel of witnesses. We are pleased Dr. Jamie Reaser, who is newly minted as the executive director of the National Invasive Species Council at the U.S. Department of the Interior. Welcome, Dr. Reaser. Mr. Scott Cameron, president of the Reduced Risks from the Invasive Species Coalition. Thank you, Mr.

Cameron. Dr. Alan Steinman, you are the director as well as a professor at the Robert B. Annis Water Resources Institute at Grand Valley State University. Am I correct?

Mr. STEINMAN. [Off audio.]

Ms. LUMMIS. Thank you Dr. Steinman. And Dr. George Beck, professor of weed science at Colorado State University. I studied weed science at the University of Wyoming under a colleague of yours, probably one that was teaching me before you were born. But welcome today, Dr. Beck.

[Laughter.]

Ms. LUMMIS. Pursuant to the committee rules, all witnesses will be sworn in before they testify, so please rise and raise your right hands.

Do you solemnly swear or affirm that the testimony you are about to give will be the truth, the whole truth, and nothing but the truth?

[A chorus of ayes.]

Ms. LUMMIS. Thank you. Please be seated. Let the record reflect that all witnesses answered in the affirmative.

Now, in order to allow time for discussions, please limit your oral testimony to 5 minutes. Your entire written statement will be made part of the record so we will have the advantage of it in case it is longer than 5 minutes.

We will begin with Dr. Reaser. You are recognized for 5 minutes.

Ms. LAWRENCE. Turn your mic on.

WITNESS STATEMENTS

STATEMENT OF JAMIE REASER, PH.D.

Ms. REASER. Madam Chairman, members of the subcommittee, thank you for inviting me to participate in the hearing on behalf of the National Invasive Species Council, NISC. With me today is Ms. Anne Kinsinger, U.S. Geological Survey's associate director for ecosystems. I will summarize my written testimony, which has been provided for the record.

NISC was created by Executive Order 13112, known as the Invasive Species Executive Order, on February 3rd, 1999, to serve as an independent coordinating body for the Federal government's efforts to address invasive species. As you have noted, the Secretary of Interior serves as a co-chair of NISC along with the Secretaries of Agriculture and Commerce. The Secretary of Interior also hosts and oversees NISC staff. At this time, 10 additional departments and agencies are members of NISC. They are listed in my written testimony.

As you may be aware or are aware, I started as executive director of NISC staff just 9 weeks ago. That said, I am not new to the invasive species issue. My work has largely focused on invasive species since 1999, not coincidentally the year in which the executive order was signed.

But in actuality, my interaction with the invasive species issue goes back much further than that. My grandmother taught me to fish as a young girl. I can remember being frustrated by the fact that I could not catch anything other than carp. I desperately wanted to see pretty sunfish up close. Because the feeding habits

of the carp muddied the water, I could not even see a sunfish near the dock.

I did my doctoral work in the Great Basin in Nevada, specifically at the southernmost extent of the species range of the Columbia spotted frog. During my time in the field, I became aware of numerous adverse shifts taking place in the lands and waters of the sagebrush ecosystem: the invasion of annual grasses, cheatgrass, and medusahead, and the introduction of non-native amphibians and tropical fish, to name a few. Invasive species clearly warranted concern and concerted action.

Since that time, I have worked on various aspects of the invasive species issue in more than 40 countries, frequently helping other governments institutionalize their capacities to address the invasive species issue. In the course of my work, I have seen first-hand how invasive species can devastate the lives and livelihoods of people who depend on local resources.

Invasive species impact everyone on a personal level, although we may not equally or fully recognize the extent to which they do. If we care about food security, water security, human health and well-being, animal welfare, employment and the economy—in short, national security—we need to pay considerably more attention to this often subtle, yet nevertheless pervasive and costly issue, invasive species.

The invasive species issue is dynamic and complex. Coordinating activities of Federal agencies and working with non-Federal stakeholders to prevent, eradicate, and control invasive species throughout the U.S. and abroad is a substantial challenge. Thankfully, challenges can be overcome.

Two examples of successes to NISC's leadership include provision of expert advice for more than 100 individuals who have served on the non-Federal Invasive Species Advisory Committee, also created by the executive order. This advice has strengthened Federal programs and initiatives, such as our work on biofuels. And the implementation of the two national invasive species management plans that together contain more than 170 action items. Additional examples can be found in my testimony.

As you are well aware, we are operating in a resource constrained world, and due to limited resources, it is fair to say NISC has not yet actualized its full potential. With the support of the Department of the Interior as well as 12 other NISC member departments and agencies, I intend to do all I can to mobilize NISC's leadership and capacities to effectively implement the Invasive Species Executive Order from the policy level to the ground level and back again.

The work includes, but is not limited to, NISC's four major functions: raising awareness of the linkages between invasive species and various aspects of national security as they relate to each Department; setting priorities for international action that actually has impact at the ground level; fostering a culture of collaboration, innovation, and long-term commitment to problem solving; and facilitating team work across departments and between Federal, State, tribes, and other stakeholders that not only results in invasive species prevented and eradicated, but ecosystems and ecosystem services restored.

Thank you for time and for caring about this critically important issue. I am happy to answer questions regarding this. Ms. Kinsinger is available to answer technical questions on specific species as needed.

[The statement of Ms. Reaser follows:]

**STATEMENT OF JAMIE K. REASER
EXECUTIVE DIRECTOR
NATIONAL INVASIVE SPECIES COUNCIL
BEFORE THE
HOUSE COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
INTERIOR SUBCOMMITTEE
REGARDING FEDERAL AGENCY COORDINATION ON INVASIVE SPECIES**

December 1, 2015

Madam Chairman and members of the Subcommittee, thank you for the opportunity to appear before you at this oversight hearing on the threats posed by alien invasive species.

Accompanying me today is Ms. Anne Kinsinger, Associate Director of the U.S. Geological Survey's Biological Research Division. I am pleased to discuss the Department of the Interior's (Department) efforts to address this issue through the National Invasive Species Council (NISC).

As manager of 500 million acres of public lands and 1.7 billion acres on the Outer Continental Shelf, the Department is committed to preventing the introduction and spread of invasive species that threaten the nation's economy, the environment, and human health. Within DOI, the Bureau of Reclamation (BOR), the Bureau of Land Management (BLM), the U.S. Geological Survey (USGS), the Bureau of Ocean Energy Management (BOEM), the U.S. Fish and Wildlife Service (FWS), the Bureau of Indian Affairs (BIA), and the National Park Service (NPS) all have various roles in the science and management of invasive species.

BOR, BLM, FWS, and NPS are responsible for programs that control invasive species which infest water systems and lands that they manage. They also cooperate with and support efforts to control invasive species and the restoration of impacted areas. BOEM supports research concerning invasive species introduced into the Gulf of Mexico, which can affect off shore oil and gas platforms. BIA supports tribal government efforts to control invasive species. The NISC and the non-federal Invasive Species Advisory Committee (ISAC) are housed and administered, respectively, within the Department.

In Executive Order 13112, through which the NISC was created, invasive species are defined as alien (or non-native) species whose introduction does or is likely to cause economic or environmental harm or harm to human health. It defines alien species, with respect to a particular ecosystem, as any species (including its seeds, eggs, spores, or other biological material capable of propagating that species) that is not native to that ecosystem.

Invasive species pose some of the greatest threats to the ecological, economic, and cultural integrity of America's lands and waters. Invasive species are, in large proportion, responsible for the endangerment and extinction of a wide range of native species; the degradation of freshwater, marine, terrestrial ecosystems; and the alteration of biogeochemical cycles. Human, animal, and plant health are compromised by non-native pathogens and parasites, which may be brought into new ecosystems through the introduction of alien vector species.

The impacts of invasive species can drive economic hardship and social instability, consequently placing constraints on the conservation of biodiversity, food and water security, and economic growth. The globalization of trade, travel, and transport is on the rise, and along with that trend comes an increase in the number and types of invasive species that are being moved around the world and the rate at which they are moving. At the same time, changes in land use and climate are rendering some habitats, including some of the best-protected and most remote natural areas, more susceptible to biological invasion.

Unfortunately, numerous invasive plants, animals, fungi, pathogens, and parasites are already well-established within the borders of the United States (U.S.). Some of these organisms arrived hundreds of years ago, while others were introduced within the last decade. Examples of invasive species that have already had substantial impacts in the U.S. include: cheatgrass (*Bromus tectorum*), five species of Asian carp [silver carp (*Hypophthalmichthys molitrix*), largescale silver carp (*H. harmandi*), bighead carp (*H. nobilis*), black carp (*Mylopharyngodon piceus*), and grass carp (*Ctenopharyngodon idella*)], and *Dreissena* mussels, which include zebra mussels (*Dreissena polymorpha*) and quagga mussels (*Dreissena rostriformis bugensis*). Information on these species is included in the latter half of my testimony.

Unless we make a concerted effort to address the formidable challenges posed by invasive species, we will not be able to protect and preserve natural, cultural, historic, and tribal resources; safeguard American citizens and their livelihoods; facilitate new economic opportunities; and build, ecological resilience to natural disasters. The threats posed by invasive species cannot be confined by geographic boundaries; given this, Federal leadership is necessary.

The National Invasive Species Council (NISC)

The National Invasive Species Council (NISC) was created by Executive Order 13112 (the ‘Invasive Species’ Executive Order) on February 3, 1999. The Secretary of the Interior serves as a Co-chair of NISC, along with the Secretaries of Agriculture and Commerce, and oversees the NISC staff. At the time the Executive Order was signed, the Secretaries of State, the Treasury, Defense, and Transportation, as well as the Administrator of the U.S. Environmental Protection Agency were also named as NISC members. Since then, the Secretaries of Homeland Security and Health and Human Services, the Administrators of the U.S. Agency for International Development and the National Aeronautics and Space Administration, and the U.S. Trade Representative have joined the Council.

The Executive Order charges NISC with the following duties:

- Ensure that Federal agency activities are coordinated, complementary, cost-efficient, and effective, engaging with the Aquatic Nuisance Species Task Force (ANSTF), Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW), and Committee for Environment and Natural Resources (CENR) as appropriate;
- Prepare, coordinate implementation, and report on the achievements of the National Invasive Species Management Plan;
- Encourage planning and action at local, tribal, state, territory, regional and ecosystem-based levels to achieve goals and objectives of the National Invasive Species Management Plan;

- Provide the leadership, coordination, technical advice, and information necessary to facilitate international cooperation in addressing invasive species;
- Develop, with the White House Council on Environmental Quality (CEQ), guidance to Federal agencies pursuant to the National Environmental Policy Act (NEPA) on the prevention and control of invasive species, including procurement, use, and maintenance of native species as they affect invasive species;
- Facilitate development of a coordinated network among Federal agencies to document, evaluate, and monitor impacts of invasive species on the economy, the environment, and human health;
- Facilitate establishment of a coordinated, up-to-date, information-sharing system that enables access to and exchange of information related to invasive species;
- Develop and recommend legislative proposals through the Co-chairs to the President for necessary changes in authority; and
- Assess the effectiveness of the Executive Order and provide recommendations for improvement, as appropriate.

NISC also manages the non-Federal Invasive Species Advisory Committee (ISAC), which was also created under Executive Order 13112 to provide expert advice to NISC.

Examples of accomplishments made during the first 15 years of NISC's operation include the:

- Increase in awareness of the threats invasive species pose to national security and to the core mission of a wide range of Federal Departments and Agencies.
- Enhanced communication and cooperation to address invasive species issues throughout the Federal agencies – from field staff to senior executive level. Numerous inter-agency working groups, committees, and task teams focus on priority challenges.
- Stronger commitments between Federal agencies and states, tribes, and other stakeholders to work together to prevent, eradicate, and control invasive species.
- Provision of expert advice from the more than 100 individuals who have served on ISAC, which helped Federal agencies advance work on a wide range of complex issues, such as the use of invasive plant species as biofuels.
- Implementation of two National Invasive Species Management Plans containing more than 170 action items in total. A third Management Plan that is focused on high priority actions to further enable NISC member Departments/Agencies is expected to be completed in early 2016.
- Integration of measures to limit the spread of invasive species through use of international agreements, including environmental frameworks and trade agreements.
- International cooperation undertaken to build the capacity of neighboring countries and trading partners to address invasive species within their own borders, thus reducing the likelihood of these organisms being spread to the U.S.

The invasive species issue is dynamic and highly complex. The coordination of the activities of Federal agencies and their collaboration with non-Federal stakeholders to prevent, eradicate, and control invasive species within the United States and abroad is a substantial challenge. In the two months since I joined NISC as its Executive Director, the Department of the Interior, in conjunction with the other Co-Chair Departments, initiated a process to further build NISC's capacity and strengthen its impact. The process for administering the Invasive Species Advisory Committee (ISAC) is being streamlined to better focus on national priorities and more targeted outputs. The streamlined Management Plan focuses on a relatively short list of priorities to substantially increase the capacity of NISC member agencies to effectively implement the Executive Order. There is a considerable amount of work before us. I am committed to doing my best to ensure that NISC's leadership results in substantial, on-the-ground progress in our efforts to prevent and manage the adverse impacts of invasive species.

The remainder of my testimony focuses on the work DOI is undertaking, in cooperation with other NISC member Departments/Agencies, to address three well-known invasive species: cheatgrass, Asian carp, and zebra/quagga mussels. The invasive species prevention and management initiatives being implemented in the western sagebrush ecosystem (cheatgrass) and in the Great Lakes region and western waterways (Asian carp, zebra/quagga mussels) are inspiring highly innovative, cooperative problem solving at landscape scales.

Cheatgrass

The problem

The sagebrush ecosystem is one of the most imperiled ecosystems in North America. It spans eleven Western states, extends into Southwestern Canada, and provides essential habitat for hundreds of plant and animal species. In addition to the various species of sagebrush (*Artemisia* spp.), the greater sage-grouse (*Centrocercus urophasianus*) and pronghorn antelope (*Antilocapra americana*) are generally considered hallmarks of the sagebrush ecosystem.

A primary threat to the sagebrush ecosystem is the invasion of annual grasses, such as cheatgrass (*Bromus tectorum*). Additional threats include the expansion of native pinyon-juniper woodlands, intensified drought, and climate change. Together, these threats foster conditions that lead to increased frequency of large, intense rangeland fires, from which the sagebrush ecosystem has a difficult time recovering.

Native to much of Europe, the northern rim of Africa, and southwestern Asia, cheatgrass is now found throughout the U.S. and Canada. Cheatgrass has been accidentally introduced through multiple events, often as a contaminant of crop seed and ship ballasts from Eastern Europe and Western Asia. The first introductions in North America are believed to have been from ship ballast dumps near St. Louis, Missouri in the 1800s.

Like many invasive plants, cheatgrass thrives in highly disturbed habitats. Its spread has been especially rapid in parts of the Intermountain West, where its introduction has followed a period of excessive livestock grazing in an ecosystem comprised of native plants that, to the best of our knowledge, did not evolve with heavy grazing pressure. The sagebrush steppe and bunchgrass regions in the Great Basin, Columbia Basin, and Snake River Plains in Nevada, Utah, Washington, Oregon, and Idaho have proven particularly vulnerable to cheatgrass invasion; the number and size of infestations in these regions has increased dramatically over the last 20 years.

Because cheatgrass now drives much of the fire cycle in the western U.S., it poses a particularly difficult challenge for land managers. The plant dries early in the summer and remains highly flammable throughout the fire season. A wind-driven rangeland fire in cheatgrass can easily and quickly burn significant acreage, destroying homes, livelihoods, and habitat along the way. If left unchecked, cheatgrass often invades sagebrush habitat after rangeland fires, re-creating conditions for more frequent, intense fires in the future. The increasing frequency and intensity of rangeland fires and conversion of the sagebrush ecosystems to invasive annual grasses thus pose major threats to ranchers, local communities, outdoor recreationists, energy developers, and others who depend on these lands and resources to sustain their livelihoods and quality of life.

Intense rangeland fires also threaten the hundreds of species that rely on the unique, critically important, sagebrush ecosystem. In 2010, the FWS identified the invasion of non-native annual grasses, coupled with the loss of habitat from the increased frequency and intensity of wildfire in the Great Basin, as the primary threat to the greater sage-grouse. The threat is particularly severe in places known as Priority Habitat Management Areas (PHMAs), locations where greater sage-grouse experts have indicated that protecting existing habitat is critical to the birds' continued viability.

The FWS recently determined that protection of the greater sage-grouse under the Endangered Species Act (ESA) was not warranted. Specifically, the FWS found: "The future of the sage-grouse depends on the successful implementation of the federal and state management plans and the actions of private landowners, as well as a continuing focus on reducing invasive grasses and controlling rangeland fire. The FWS has committed to monitoring all of the continuing efforts and population trends, as well as to reevaluating the status of the species in five years."

The Department of the Interior's Response

The increased frequency and impact of rangeland fires necessitates a well-coordinated, multi-stakeholder approach to protect and restore the sagebrush ecosystem. Consistent with implementation of *An Integrated Rangeland Fire Management Strategy: Report to the Secretary of the Interior*, DOI has joined with the U.S. Department of Agriculture (USDA), tribes, other Federal, state, and local agencies, private industry, and various non-governmental organizations (NGOs) to control current cheatgrass infestations, prevent new plant invasions from occurring, and restore disturbed habitats. Examples of specific activities include:

- Action to advance the Environmental Protection Agency's (EPA) registration of a strain of bacterium (*Pseudomonas fluorescens*) commonly known as ACK-55. This bioherbicide inhibits the growth of various invasive plants, including cheatgrass. It has shown promise as a cost-effective method to treat cheatgrass-infested landscapes.
- Launching of National Seed and Pollinator Strategies to accelerate the development, storage, and distribution of native seed throughout the West so as to improve the efficiency and efficacy of efforts to restore native vegetation across western landscapes.
- A comprehensive effort to restore lands impacted by rangeland fire this past summer in eastern Oregon and western Idaho. The Soda Fire burned 283,000 acres, 37,000 of which was core habitat for the greater sage-grouse. Curbing the spread of cheatgrass and restoring areas impacted by fire with native vegetation will be essential to ensuring the restoration of sage grouse habitat in these critically-important areas.

In mid-November, Federal and state agency representatives, as well as ranchers and members of NGOs, gathered in Boise, Idaho for the Western Invasive Weed Summit. Participants overwhelmingly agreed that a unifying, compelling vision and comprehensive strategy are needed to protect and restore the sagebrush ecosystem, and that the management of invasive plants linked, in particular, to reducing the risk of rangeland fire in the Great Basin, needs to be regarded among the highest priorities.

Asian Carp Species

The problem

The term 'Asian carp' refers collectively to a group of five East Asian fish species: bighead carp, black, grass carp, and silver carp. The bighead carp has been cultured and sold in the U.S. as a live food fish product since the early 1980s. Grass carp have been stocked nationally by public and private entities since the mid 1970s as a biological control for nuisance aquatic weeds. They are also cultured and sold as a live food fish product. The black carp has been used in the U.S. since the early 1990s as a biological control agent for snail-borne parasites in commercial aquaculture production ponds. Silver carp, although cultured on a limited basis in the past, are not presently cultured in the United States. The fish are difficult to contain due to their tendency to jump. Asian carp that have escaped their holding facilities or been deliberately released into the wild have quickly spread throughout the Mississippi River basin. Once established in an ecosystem, Asian carp species have thus far proven virtually impossible to eradicate. It is, therefore, crucial to prevent Asian carp from entering their next frontier: the Great Lakes.

Asian carp species represent a primary threat to the health of freshwater ecosystems and their related economies in the U.S. Once established, Asian carp populations can grow fast; adult Asian carp have no natural predators in North America and females lay approximately half a million eggs each time they spawn. The fish can consume up to 20% of their bodyweight per day and grow to over 100 pounds.

By consuming large amounts of plankton (the foundation of the aquatic food chain), Asian carp outcompete native aquatic species in areas of Upper Mississippi River basin, and Ohio River basin and tributaries (e.g. Missouri River and Tennessee River). Asian carp species currently impact districts of the Upper Mississippi River National Wildlife and Fish Refuge administered by the FWS across multiple states. They potentially threaten areas of Mississippi National River and Recreation Area and the St. Croix National Scenic Riverway administered by the National Park Service (NPS). Prevention and early detection efforts are critical for these areas.

The huge, hard-headed silver carps also pose a threat to boaters and industries dependent on boating. When startled by boat engines, the fish will leap out of the water, often causing injuries when they collide with people.

The Department of the Interior's Response

Bighead, black and silver carp are listed as injurious wildlife under the Lacey Act (18 USC 42) and may not be imported into the U.S. or transported alive across state lines. Through the FWS, the Department enforces these prohibitions. In addition, the FWS works with federal and state agency partners to implement a national strategy and a Great Lakes-specific Asian carp strategy. *The Management and Control Plan for Bighead, Black, Grass, and Silver Carps in the United States* (National Plan), completed in 2007, serves as a plan for the eradication of Asian

carp in the wild. The *Asian Carp Control Strategy Framework* (Framework), created in 2010 and updated annually, establishes goals to reduce or extirpate existing Asian carp populations, minimize impacts of those populations, contain the expansion of such populations, prevent future introductions, educate the public, and conduct necessary research.

In keeping with the Water Resources Reform and Development Act (WRRDA) of 2014, the FWS, in coordination with the NPS, USGS and other non-DOI partners (e.g., U.S. Army Corps of Engineers; USACE), leads multi-agency actions to slow, and eventually eliminate, the spread of Asian carp in the Upper Mississippi River Basin and Ohio River Basin and tributaries. To date, collective actions to address Asian carp have included provision of technical assistance, coordination, best practices, and support to state and local governments engaged in activities to decrease and eventually eliminate that threat, and where possible leverage previous work conducted under the Asian Carp Framework.

Examples of additional activities include:

- Implementation of an environmental deoxyribonucleic acid (eDNA)-based early detection and monitoring program for Asian carp in the Great Lakes, Upper Mississippi River, and Ohio River basins.
- Distribution of funds to state partners via cooperative agreement to support state led Asian carp prevention, early detection, monitoring, and control efforts under approved State Aquatic Nuisance Species Management plans.
- Development of integrated pest management tools (e.g., barriers, fish-targeted pesticides, biological control agents, attractants), molecular tools (e.g. eDNA markers) for near real-time detection and risk assessment, models to assess risk of Asian carp spawning and to better target control efforts.

Zebra/Quagga Mussels

The problem

Zebra and quagga mussels, collectively referred to as Dreissenid mussels, are small, but formidable aquatic invaders. Although different species, they are virtually identical, both physically and behaviorally. Originally from Eastern Europe, these mussels were picked up in the ballast water of ocean-going ships and brought to the Great Lakes in the 1980s. Within just ten years, they infested all of the Great Lakes.

Zebra and quagga mussels have a wide variety of impacts. They harm native fish populations by stripping the food web of vital plankton, their shells litter beaches, and they can attach to boats, obstruct water intake pipes, and other structures. Zebra and quagga mussels promote water clarity by filter feeding; however, in doing so, enabling sunlight to penetrate to the lake bottom where it led to enhanced plant growth which in turn fosters deadly algae blooms. When algae foul beaches and dissolved oxygen levels in water drop, botulism outbreaks may occur. In the last decade, botulism has killed countless fish and tens of thousands of aquatic birds. The collective impacts cost the Great Lakes economy billions of dollars a year in damage.

Since their original introductions, quagga and zebra mussels have spread to 29 states by hitching rides on boats being transported between the Great Lakes and Mississippi River Basins. Artificial

channels, such as the Chicago Area Waterways System (CAWS), have facilitated the spread of invasive species. Thus far, these mussels have proven impossible to fully eradicate once they are established. It is difficult to identify methods to control zebra and quagga mussels that do not adversely impact native species.

Nine National Wildlife Refuges currently are known to have zebra mussels. The NPS has ten units with established Dreissenid mussels (including zebra mussel or quagga mussels) in them. The BOR experiences buildup of zebra mussels in infrastructure used to transport water. Beginning in FY2014, the NPS made \$2 million per year available for quagga / zebra mussel management in nine western parks. Two of these parks [Glen Canyon National Recreation Area (NRA) and Lake Mead NRA] are running one of the largest mussel containment programs in the country with the assistance of FWS funding. The remaining seven parks have used their portion of funds to establish mussel prevention programs.

The Department of the Interior's Response

Recognizing the threat of aquatic invasive species to U.S. waters, Congress passed the Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA) in 1990. NANPCA listed zebra mussels as injurious wildlife under the Lacey Act (18 USC 42), and the work conducted under this act has slowed the spread of both zebra/quagga mussels. It continues to foster collaborative problem solving across the much of the U.S.

Coordination of Federal and state efforts to address aquatic invasive species is largely conducted through the Aquatic Nuisance Species Task Force (ANSTF), which was authorized through NANPCA and is co-chaired by the FWS and the National Oceanic and Atmospheric Administration (NOAA). All DOI Bureaus are Task Force members. Under the Task Force, 42 states have developed Task Force-approved state or Interstate Aquatic Nuisance Species Management Plans and a Quagga/Zebra Mussel Action Plan (Q/ZAP) has been developed to address this issue in the western states. The Department, through the FWS, provides limited funding through Federal appropriations for implementation of these plans.

Examples of additional DOI actions to prevent further impacts of these mussels in public waters and on public water infrastructure, include:

- Coordination of programs to inspect and decontaminate recreational boats, as well as to educate stakeholders on the dangers of transporting zebra mussels and ways to prevent their spread.
- Development of control technologies (e.g., spawning inhibitors, microparticles), optimizing deployment of molecular detection tools, producing distribution maps, and investigating ecosystem impacts of invasive mussels.
- Leadership of the Invasive Mussel Collaborative, a cooperative initiative to facilitate information exchange, develop joint integrated pest management approaches, and coordinate communication and outreach activities.
- Preparation of the *Federal Policy Options: Addressing the Movement of Aquatic Invasive Species Onto and Off of Federal Lands and Waters* in August of this year through work of the ANSTF and NISC staff. This paper provides guidance and policy options to increase coordination among Federal government, state, and local partners in their efforts

to prevent and contain the spread of aquatic invasive species, including zebra and quagga mussels.

Invasive species are one of the most pervasive, yet least recognized, threats to national security. Executive Order 13112 has helped advance awareness of the invasive species issue, as well as concerted efforts to address it in the U.S. and beyond. Although the NISC is subject to the various challenges inherent in large, multi-institutional coordinating bodies, it has added substantial value across the Federal government and to states, tribes, and other stakeholders. A considerable amount of work remains to be done on invasive species. DOI is committed to co-chairing NISC and administering NISC staff in a manner that is cost-efficient and highly impactful. Given the ecological, economic, and cultural harm that invasive species pose to the Nation, it is imperative that the Federal government continues to partner with states, tribes, and other stakeholders to protect our natural resources and the people who depend on them. Madam Chairman, thank you for the opportunity to testify on a topic of mutual concern. This concludes my testimony. I am happy to address the Committee's questions regarding NISC.

Ms. LUMMIS. Thank you, Dr. Reaser.
The chair now recognizes Mr. Cameron for 5 minutes.

STATEMENT OF SCOTT J. CAMERON

Mr. CAMERON. Madam Chairman, Ranking Member Lawrence, members of the subcommittee, my name is Scott Cameron. I am president of a nonprofit organization called the Reduce Risks from Invasive Species Coalition, or RRISC. I appreciate the opportunity to testify today on opportunities to improve invasive species policy and programmatic implementation in the United States.

RRISC is a 501(c)(3) organization incorporated in 2014. Our mission is to educate the public on the risks imposed by invasive species and to promote cost-effective strategies to reduce those risks. We pride ourselves on being bipartisan with a distinguished advisory board comprised of former senior government officials from the Obama, Bush, Clinton, and Bush Administrations. I am pleased to say that since our inception, we have had a close working relationship with the Congressional Invasive Species Caucus, co-chaired by your own representatives, Dan Benishek from Michigan and Mike Thompson from California.

Invasive species pose serious economic and environmental problems across the country. They have been estimated to cost the American economy more than \$120 billion a year and to have a \$1.4 trillion annual impact on the global economy. There are significant public health impacts from invasive species. For instance, invasive species, like West Nile virus and fire ants, put many Americans in the hospital every year, and in some cases they do not survive. Invasive species have single-handedly caused 20 percent of all species extinctions since the 1600s, and they have been implicated in up to half of all the species extinctions over the last four centuries.

Indirectly, they cause increased regulatory burden on American society since invasives are in whole or in part responsible for more than 40 percent of the listings under the Endangered Species Act. For example, widespread distribution of invasive cheatgrass in Wyoming and Colorado was a key risk factor that almost led to the listing of the greater sage grouse under the Endangered Species Act earlier this year.

If your constituents are concerned about loss of biodiversity and species extinctions in the United States, then they should also be concerned about invasive species. If your constituents are frustrated by the regulatory burden imposed by the Endangered Species Act, that is another reason to be concerned about invasive species because they are putting a lot of species on the ESA list.

I would now like to offer a number of recommendations on how institutional arrangements could be improved to yield better results in invasive species management for our country.

Congress should direct the National Invasive Species Council to present the Congress with a short annual work plan, 5 pages in length, to include deadlines and intended outcomes of Council activities. This would help focus the political level attention in the agencies on the invasive species problem.

The National Invasive Species Council should provide a forum for Federal interagency communication and coordination with regional

governors associations—southern governors, western governors, and so on. NISC should design a national network of regionally-driven, early detection, and rapid response capabilities whose regional priorities are established based on the advice of the governors of those States in those regions.

NISC should provide a forum for Federal agency regional executives, BLM State directors, regional foresters, EPA regional administrators, and so on, so that those regional officials could more easily get the attention of the departmental political leadership in headquarters in the Office of Management and Budget. And through more coordinated policymaking at the headquarters level, achieve better on-the-ground coordination at the local level.

The Council should provide a forum for ensuring and expediting interagency coordination at the headquarters level so that time sensitive decisions involving invasive species policy, regulatory approvals, or research are less likely to be caught up in bureaucratic red tape in D.C. As an example, facilitating Endangered Species Act, Section 7 consultation between USDA and EPA on new pesticides targeting invasive species; working with the Council on Environmental Quality to streamline environmental compliance for agency on the ground invasive species control actions; and achieving an interagency bio control research agenda that would effectively leverage the relative scientific strengths of EPA, USGS, USDA, and the National Science Foundation.

Another recommendation. NISC should seek out and evaluate international best practices and explore the feasibility of adopting those best practices in the United States.

It looks like I am over time, so I will stop, Madam. Chairman, and I look forward to questions.

[The statement of Mr. Cameron follows:]



Testimony of Scott J. Cameron

President, The Reduce Risks from Invasive Species Coalition

Before the Subcommittee on Interior

Committee on Oversight and Government Reform

US House of Representatives

Washington DC

December 1, 2015

Madame Chairman, Ranking Member Lawrence, members of the subcommittee, my name is Scott Cameron. I am President of a non-profit organization called the Reduce Risks from Invasive Species Coalition, or RRISC. I appreciate the opportunity to testify today on opportunities to improve invasive species policy and programmatic implementation in the United States.

RRISC is a 501(c)(3) organization incorporated in 2014. Our mission is to educate the public on the risks posed by invasive species, and to promote cost-effective strategies to reduce those risks. We pride ourselves in being bipartisan, with a Distinguished Advisory Board comprised of former senior government officials from the Obama, Bush, Clinton, and Bush Administrations. I am pleased to say that since our inception we have had a close working relationship with the Congressional Invasive Species Caucus, co-chaired by Representatives Dan Benishek and Mike Thompson.

Scope of the Problem

Invasive species pose serious economic and environmental problems across the United States. They have been estimated to cost the American economy \$120 billion annually, and to have a \$1.4 trillion annual impact on the global economy. There are significant public health impacts from invasive species. For instance, invasive species like West Nile virus and fire ants put many Americans in the hospital every year, and in some cases the patients don't survive. Invasive species have singlehandedly caused 20% of all species extinctions since the 1600s, and at least contributed to the extinction of half of all species that we have lost. Indirectly, they cause increased regulatory burden on American society, since they are in whole or in part responsible for more than 40% of the species listings under the Endangered Species Act. For example, widespread distribution of invasive cheat grass was a key risk factor that almost led to the listing of the greater sage grouse across the West earlier this year. If your constituents are concerned about loss of biodiversity and species extinctions in the United States, then they should also be concerned about invasive species. If your constituents are frustrated by the regulatory burden imposed by the Endangered Species Act, then they should also be concerned about invasive species.

Having worked on invasive species issues as both a federal and state government employee for twenty-three years, and for another five years in the private and non-profit sectors, I would like to offer a number of recommendations on how institutional arrangements could be improved to yield better results in invasive species management for America.

Specific Policy Recommendations

The National Invasive Species Council, established by President Clinton through Executive Order 13112 in 1992, is only as effective as the level of interest displayed by the political appointees who oversee its small staff of career civil servants. While the Secretaries of Agriculture, Commerce and the Interior nominally co-chair the Council, the reality is that focused attention at the Assistant Secretary or even deputy assistant secretary level, would make for a much more effective Council. Unfortunately, that focused attention has been inconsistent in the last few years, and so the Council has drifted. Were Congress to direct the National Invasive Species Council to present the Congress with a short annual work plan, to include deadlines and intended outcomes of Council activities, it would help to focus political level attention on the Council's work.

Most invasive species problems are regional in nature, can only be solved at the regional level, and so it is not surprising that Governors tend to be the elected officials who are the most consistently engaged

in invasive species issues. The National Invasive Species Council should therefore provide a forum for federal interagency communication and coordination with the regional governors associations to establish what the invasive species priorities of the Governors might be on a regional basis, and what the federal government can do to support them from policy, budgetary, and research perspectives. For example, for the Western Governors, the priorities might be dealing with the cheat grass that almost led to the ESA listing of the greater sage grouse, and keeping zebra and quagga mussels out of Western rivers and reservoirs, and associated water supply and hydroelectric facilities. For the Great Lakes governors, the priorities might be keeping Asian carp out of the Great Lakes and targeting federal research to combat the emerald ash borer that is killing millions of trees in Midwestern forests and urban neighborhoods.

While the best way to deal with invasive species is to keep them out of the country in the first place, implementing a foolproof regulatory regime to achieve that end that would be too expensive and too draconian to be politically acceptable. As a result, we need to adopt a more practical and cost-efficient strategy, a defense in depth. Therefore, strong efforts to protect our borders from illegal biological immigrants, invasive species, must be coupled with a robust national network for early detection and rapid response to address new invasions that do make it across the border. For instance, it is a lot easier and more cost-efficient to wipe out the first acre of kudzu in a state than to delay action until you are faced with a thousand acres, or ten million acres of that weed across an entire region. Accordingly, the National Invasive Species Council should design a national network of regionally driven early detection and rapid response capabilities, whose regional priorities are established based on the advice of the Governors of the states in the same region.

It is ultimately the federal agency Regional Directors, State Directors, Regional Foresters, Regional Administrators, and so on who oversee delivery of federal agency invasive species programs on the ground. More often than not, strong interagency coordination on policy and budget is required to achieve a successful result on the ground. For instance, if BLM and the Forest Service are not able to coordinate activities on adjacent land ownerships in Wyoming because their headquarters are taking an inconsistent approach to funding, then one agency cannot singlehandedly address the problem and so the effort will fail. The National Invasive Species Council should provide a forum for federal agency Regional executives to more easily get the attention of both Departmental political leadership and the Office of Management and Budget in order to ensure a balanced mutual commitment at agency headquarters to facilitate interagency cooperation on the ground.

The Council should provide a forum for ensuring and expediting interagency coordination at the headquarters level, so that time-sensitive decisions involving invasive species policy, regulatory approvals, or research are less likely to be caught up in bureaucratic red tape. Examples include facilitating Endangered Species Act section 7 consultation between USDA and EPA on new pesticides targeting invasive species, working with the Council on Environmental Quality to streamline environmental compliance for agency on-the-ground invasive species control actions, and achieving a coordinated interagency biocontrol research agenda that would effectively leverage the relative scientific research strengths of EPA, USGS, USDA, and NSF. One of the most conspicuous bureaucratic failures that could benefit from this type of attention is the US Fish and Wildlife Service's repeated inability to use its existing regulatory authority to take prompt action to list injurious species under the Lacey Act, and so prohibit them in international and interstate commerce. When members of Congress who are not typically fond of new federal regulation find themselves so exasperated with the Service's

regulatory delays to the point where they feel compelled to legislatively list species under the Lacey Act, then you know the agency's program is broken.

The United States does not necessarily have the world's best policies and programs for dealing with invasive species. In fact, countries like Australia, New Zealand, and South Africa have things to teach us in this regard. **The National Invasive Species Council should seek out and evaluate international best practices and the feasibility of adopting them in the United States.** The Council should develop issue papers that lay out legislative, regulatory, and policy options for the United States government to consider as tools to improve our own programs.

One of the crucial capacities that is necessary in invasive species management is the ability to identify an unfamiliar organism when it is first encountered in a country where it has not been seen before. This requires access to trained taxonomists. Since newly encountered species are often unfamiliar to scientists in the newly invaded country, one needs an international network of taxonomists to help with identification and risk assessment. **The National Invasive Species Council should facilitate international communication among taxonomists, and encourage our own National Science Foundation to support a sufficient pipeline of new American taxonomists so we are in a position to interact effectively with taxonomists overseas, and catch new high risk introductions of foreign species before they get out of hand.**

The Council has responsibility for producing and periodically revising the National Invasive Species Management Plan. **Such a plan should be under 50 pages in length so it is likely to actually be read and used. It should clearly articulate goals, priorities, strategies, definitions of success associated with those goals, and performance metrics so Congress and the public can assess whether progress is being made over time.** Most of all, the revised plan needs to be made available for public comment, not developed in a vacuum by the Council staff. Given the critical role of state and local governments, private landowners, and non-profit volunteer organizations in all collectively dealing with invasive species, the plan would benefit greatly from their input. In particular, **the Invasive Species Advisory Committee, a broad group of stakeholders convened to advise the Secretary of the Interior under the auspices of the Federal Advisory Committee Act, needs to have ample opportunity to help shape and review the draft National Invasive Species Management Plan.**

Looking Toward the 2019 Farm Bill

With the encouragement of USDA, the Reduce Risks from Invasive Species Coalition recently announced our intention to convene a broad group of stakeholders to prepare to systematically and comprehensively incorporate invasive species issues in the 2019 Farm Bill. To advance this agenda, we will convene industry, professional associations, non-profit groups, environmental groups, and state and local governments, and other interested parties early in 2016 so that we will have a package of proposals to present to the next President and the House and Senate Agriculture Committees in 2017.

Unintended Consequences

It is worth noting that sometimes in the past state or federal natural resource agencies have deliberately introduced new species into areas of the country where those species were not native, in order to accomplish some otherwise legitimate policy objective, such as erosion control or creating a new sport fishery. Sometimes those introductions turn out to be benign, as was the case of introducing Pacific

salmon in the Great Lakes. In other cases, such as the kudzu vine in South, or the tamarisk shrub in the West, the introduction backfires badly, as the introduced species turns invasive, causing economic or ecological damage. Sometimes the introduced species even ends up complicating state and federal efforts to recover endangered species.

An example of the latter is the stocking a number of years ago by the State of California of striped bass in the San Francisco Bay Delta. Striped bass are native to the east coast of the United States, where they are a great sport fish. Here in the Chesapeake Bay region they are called rockfish. Over the years, striped bass have done well in the San Francisco Bay Delta, creating a great sport fishery. Unfortunately they also like to eat young California salmon and Delta smelt, which are listed under the federal Endangered Species Act. Enormous effort at great cost is being expended by the State of California, federal agencies, and local governments to recover those salmon and the Delta smelt. In order to comply with the Endangered Species Act and try to protect the smelt, farmers in California's Central Valley are being deprived of the irrigation water they desperately need to survive, resulting in high unemployment, and lost income and farm production. In addition, the constraints of the ESA on water moving through the Bay Delta mean that the water supply of Los Angeles and San Diego is less secure, due to striped bass predation on the endangered fish in the Bay Delta. I am sure introducing those East Coast striped bass to California seemed like a great idea at the time, but it turns out there were serious unintended consequences for the farmers of the Central Valley, the drought-stricken residents of southern California, and the endangered fish. Attached to my testimony is a fact sheet on this particular issue.

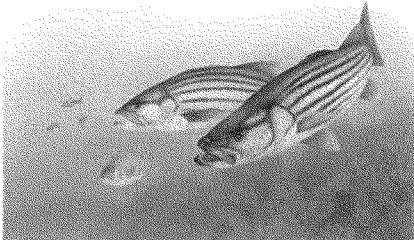
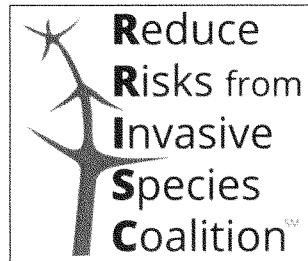
There is Reason to Be Optimistic

While invasive species problems are numerous and serious, the situation is by no means hopeless. There are numerous success stories, from controlling sea lampreys in the Great Lakes and so saving that prized fishery, to Nebraska's great success in reducing its acreage of noxious weeds by 75%. Targeted research on biocontrols, better intergovernmental coordination, strategically chosen new budgetary investments, and streamlined federal bureaucratic processes are all part of a larger solution.

In closing, I commend the Committee for holding this hearing. Invasive species pose real and present ecological, economic, and human health threats to the United States. If this Committee and the Congress more generally could give this issue greater attention, it would go a long way to mitigating those threats.

When is a Sportfish an Invasive Species?

When it eats an endangered species



Striped Bass

The striped bass (*Morone saxatilis*) is a prized gamefish native to the Atlantic coast and Gulf of Mexico. It can reach five feet in length, exceed one hundred pounds in weight, and is excellent eating. Unfortunately, its voracious appetite, which is a boon to anglers, may be indirectly causing problems for many Californians, and so positions it as an invasive species in that state.

In 1879, about 100 juvenile striped bass were transported from their home in New Jersey to California's San Francisco Bay Delta estuary at the instigation of the California fish and game agency. Over a period of years, there were other introductions of stripers into California waters, including by the predecessor agency of what is now the US Fish and Wildlife Service.

Ironically, this is the same Fish and Wildlife Service that in 1973 came to administer the Endangered Species Act (ESA). A small fish called the Delta smelt, native to the same San Francisco Bay Delta where state and federal agencies introduced the striped bass, was listed as Threatened under the ESA in 1993, and also listed as endangered under California's own state endangered species law. Unfortunately, Delta smelt are just the right size to make a good meal for a striped bass. Endangered salmon runs also have to run the striped bass gauntlet as their young try to make it to the ocean without ending up in a striped bass' stomach.

While the Delta smelt and young salmon are certainly not the exclusive diet of striped bass in the San Francisco Bay Delta, the striped bass' healthy appetite is no doubt helping to suppress the recovery of both endangered fish. The socioeconomic implications for California water users and farmers are significant. The federal government has reduced water deliveries from the Bay Delta to farmers in California's fertile Central Valley in an effort to leave more water in

the San Francisco Bay Delta to help the delta smelt and salmon. Water deliveries to urban water users in Southern California have also been affected by this federal regulatory activity.

While the striped bass is a game fish, it is also an invasive species in California since its predatory behavior fits the definition under the Clinton era Executive Order 13112, which



Delta Smelt

defines an invasive species as "an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health". By eating endangered Delta smelt and young salmon, the striped bass is causing direct environmental harm and indirectly causing economic harm to agriculture and water users in California.

The striped bass in California is just one of many examples of government inadvertently introducing invasive species. Well-known plagues like kudzu and tamarisk were also introduced to the United States by well-intentioned government agencies trying to solve a problem, but ended up creating problems that proved much more significant than those they hoped to solve.

Fortunately, there are obvious tools to suppress the bass population in favor of the Delta smelt and salmon. Eliminating catch and size limits would go a long way to reduce the bass population. The question is, will the state of California favor the endangered Delta smelt and the water users affected by it, or the anglers who enjoy catching the striped bass?

Mr. BUCK. [Presiding] Thank you, Mr. Cameron.
The chair recognizes Dr. Steinman for 5 minutes.

STATEMENT OF ALAN D. STEINMAN, PH.D.

Mr. STEINMAN. Thank you, Chairman Buck, Ranking Member Lawrence, and members of the subcommittee. I appreciate the opportunity to testify before you today with regard to the threats posed by invasive species, and, in particular, their impacts in the Great Lakes region.

There are four areas that I would like to cover today. The first is invasive species and the Great Lakes. The Great Lakes serve as the poster child for aquatic invasive species. It is now estimated since the 1800s, over 180 non-native species have invaded the Great Lakes ecosystem.

The Great Lakes are a national treasure. They hold over 20 percent of the world's surface fresh water, and over 90 percent of the surface fresh water in the United States. The importance of this resource, both in terms of water quantity and water quality, cannot be overstated given the increasing concerns over water security in this Nation and around the world.

Aquatic invasive species are acutely felt in the State of Michigan, a state which touches four of the five Great Lakes—our governor likes that four of the five Great Lakes favor Michigan—and where 1 in 5 jobs are linked to water. The second area I would like to talk about are the ecological impacts in the Great Lakes. These include habitat loss, food web disruption, and alterations to native fisheries.

Two aquatic invasive species that have been particularly problematic in the Great Lakes are the sea lamprey and the Dreissena mussels, which include the quagga and zebra mussels. The sea lamprey, for those not familiar with it, is an eel-like parasite whose native habitat is the ocean. It got into the Great Lakes after the Welland Canal was improved, and it bypassed the Niagara Falls. By 1938, they had reached all of the Great Lakes.

Sea lamprey parasitism is not a pretty site. They attach to fish with a suction cup mouth, and dig their teeth into fish flesh, and finally feed on fish body fluids by secreting an enzyme that prevents the blood from clotting. The lake trout harvest in the upper Great Lakes has declined from about 15 million pounds per year before the sea lampreys to approximately 300,000 pounds now, a decline of 98 percent of this critical fish. The good news is the sea lamprey control program is very effective. We have to apply it every year, though, and it costs about \$20 million per year.

The zebra and quagga mussels also have caused extensive damage. They came in through ballast water discharge. The zebra mussel was first found in 1988 in Lake Sinclair, quickly followed by its larger and more aggressive cousin, the quagga mussel. In fact, the quagga mussel is now estimated to have about 950 trillion—that is with a “T”—in Lake Michigan alone. That is a huge number. They are filter feeders there literally sucking the bioenergetic life out of Lake Michigan. Once you decline the algae levels—they are lower than they are in Lake Superior—there is no food for the zooplankton to feed on. When there is no zooplankton, there is no food for crayfish to feed on, and when there is no crayfish, there

is no food for the top predators, the salmon and the lake trout, to feed on. So the devastation to the food web and the economic impacts are enormous.

Which leads me to the third area I would like to talk about: the economic influences of invasive species in the Great Lakes. In Michigan, especially affected by aquatic invasive species, the industry has influenced or affected our power generation, industrial facilities, tourism, and sport and commercial fisheries, which account for about 30,000 jobs and almost \$12 billion in annual sales based on 2010 data.

As Representative Lawrence mentioned, the commercial and recreational fishery industry in the Great Lakes is estimated to be between \$4 and \$7 billion, and they are at critical risk by the presence of these invasive species.

And finally, I would like to address the management implications. With the Asian carp at the entryways of the Great Lakes, we must be coordinated in our approaches to monitor our waterways to keep invasive species from getting into the Great Lakes, quarantine them when necessary and where possible, and then finally eradicate them when feasible. It is critical to recognize that in a hydraulically connected system like the Great Lakes, the program to control aquatic invasives is only as strong as the weakest link in that chain.

Regardless of how vigilant or aggressive Michigan may be in dealing with aquatic invasive species, its waters remain vulnerable if any of the other seven Great Lakes States or two Canadian provinces are not as equally vigilant or aggressive. And this concept of vulnerability applies well beyond aquatic ecosystems. It applies to any connected ecosystem across its jurisdictional boundaries, whether it is water, land, or air.

It is clear that we need a coordinated effort to tackle invasive species instead of jumping from one crisis to another, and good science is needed to make informed management decisions. I clearly understand the role of science having worked in the Everglades restoration before I came to Michigan, and I recognize that science does not dictate policy; it helps inform policy.

But let me leave you with this one thought taken from Peter Glick, one of the foremost water resource scientists on the planet. It is very difficult to make good public policy without good science, and it is even harder to make good public policy with bad science.

Thank you again for the invitation to appear before you today.
[The statement of Mr. Steinman follows:]

TESTIMONY OF
ALAN D. STEINMAN, DIRECTOR
ANNIS WATER RESOURCES INSTITUTE
GRAND VALLEY STATE UNIVERSITY
BEFORE THE COMMITTEE ON OVERSIGHT AND GOVERNMENT
REFORM, SUBCOMMITTEE ON THE INTERIOR
MICHIGAN HOUSE OF REPRESENTATIVES

December 1, 2015

ORAL TESTIMONY

Good morning. Chairman Lummis, members of the subcommittee, I thank you for the invitation to appear before you and testify with regard to the threats posed by invasive species, and in particular, the ecological and economic impacts of aquatic invasive species (hereafter, AIS) in the Great Lakes region and in Michigan, specifically. My name is Alan Steinman and I have spent the past 14 years as Director of the Annis Water Resources Institute at Grand Valley State University, located in Muskegon, MI. Prior to that, I was Director of the Lake Okeechobee Restoration Program for the South Florida Water Management District, which is responsible for overseeing the Comprehensive Everglades Restoration Program.

I have four main areas that I would like to cover in my comments:

1. Invasive Species and the Great Lakes

Let's be clear—*most* introduced species do not become established, and even fewer result in either direct or indirect significant societal costs. This is true whether we are referring to terrestrial or aquatic invasive species. However, it takes only one species to cause disproportionate harm. In aquatic ecosystems, the Great Lakes have served as the poster child for AIS¹; it is now estimated that since the 1800s, over 180 non-native species have invaded the Great Lakes ecosystem². Numerous studies have identified AIS as one of, if not the, most important stressor impacting the health of the Great Lakes^{3,4}.

Concerns regarding AIS in the Great Lakes, as well as inland waters, are not merely academic. The Great Lakes hold nearly 20% of the world's surface fresh water and

~90% of the surface fresh water in the United States. The importance of this resource, both in terms of water quality and water quantity cannot be overstated, especially with increasing concerns over the status of fresh water resources in this nation and around the world. AIS issues are acutely felt in Michigan, a state which touches 4 of the 5 Great Lakes, contains over 11,000 inland lakes, and where 1 in 5 jobs are linked to water⁵.

2. Ecological Impacts of Invasive Species

Ecological impacts involving AIS include habitat loss, food chain disruption, and alterations to native fisheries¹⁴. Two AIS that have been particularly disruptive in the Great Lakes are the sea lamprey (*Petromyzon marinus*) and dreissenid mussels (*Dreissena polymorpha* [zebra mussel] and *D. bugensis* [quagga mussel]).

The sea lamprey is an eel-like parasite, whose native habitat is the ocean. Historically, Niagara Falls served as a natural barrier, confining them to Lake Ontario after swimming up the St. Lawrence Seaway, and preventing them from entering the remaining four Great Lakes. However, the lamprey were able to bypass Niagara Falls after improvements were made to the Welland Canal in the late 1800s. The improvements enhanced the shipping connection between Lakes Ontario and Erie, but also allowed sea lampreys access to the rest of the Great Lakes.

Sea lampreys had reached all of the other Great Lakes by 1938. And they thrived in the Great Lakes because they had no natural predator and there was an abundance of host fish to prey upon. Sea lamprey parasitism is not a pretty sight (Figure 1). They attach to fish with a suction cup mouth, and then dig their teeth into fish flesh. Sea lampreys feed on the fish body fluids by secreting an enzyme that prevents blood from clotting.

Sea lampreys have had a devastating effect on the Great Lakes fishery; prior to their invasion, approximately 15 million pounds of lake trout were harvested from the upper Great Lakes each year. By the early 1960s, the catch had declined to approximately 300,000 pounds, about 2% of the previous average⁶. The good news is that there is a sea lamprey control program, administered by the Great Lakes Fishery Commission. The control program involves not only the application of lampricides, which are

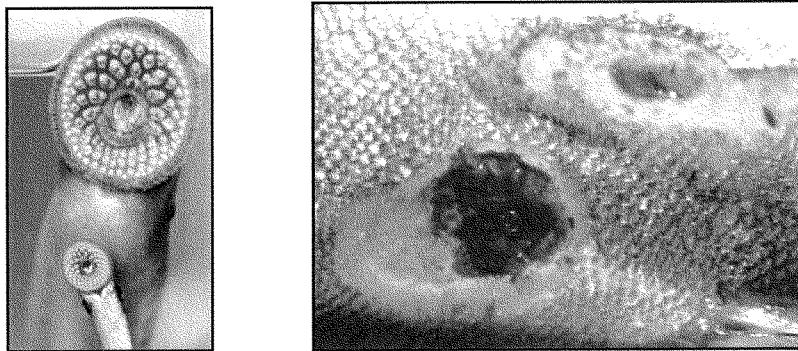


Figure 1. Sea lamprey suction cup mouth (right) and wounds to fish host (left). Photo credit: MI Sea Grant (left) and Smith-Root (right).

pesticides that are selective to lampreys and are deployed to kill larval (young) sea lampreys when they still live in tributaries before migrating to a Great Lake, but also a combination of barriers and traps to prevent the upstream migration and reproduction of adult sea lampreys. The bad news is that control doesn't come without a cost—the sea lamprey control program budgets of the Great Lakes Fishery Commission, Fisheries and Oceans Canada, and control agents of the U.S. Fish and Wildlife collectively exceed \$20 million per year⁷.

Zebra and quagga mussels have caused extensive damage to the Great Lakes. The zebra mussel was first found in the Great Lakes in 1988⁸ and was quickly followed by its larger and more aggressive cousin, the quagga mussel. These filter-feeding organisms, introduced through ballast water discharge, have had profound effects on the ecology and chemistry of the Great Lakes, inland lakes, and beyond⁹. Given their extremely high numbers—quagga mussel densities can reach 35,000 per m² in Lake Michigan—these organisms on the bottom of lakes can filter enormous amounts of water. Ironically, the clearing of the water is considered a good thing by some people, as it improves the clarity of the water. However, the over-removal of algae, which is happening in lakes with extensive zebra and quagga mussel populations, can also disrupt the food web, as these algae form the base of the web, providing the nutritional support for all the organisms that are directly or indirectly dependent on them. Indeed, this “bottom-up” regulation of

the food web is likely responsible for the serious decline in fish stocks in the Great Lakes over the past 25 years⁴.

And to make matters even worse, while the dreissenid mussels filter all types of algae, they actually “spit out” or egest (as pseudo-feces), the blue-green algae (cyanobacteria) that form the harmful algal blooms that are becoming more prevalent in the Great Lakes region¹⁰ and throughout the world¹¹. Hence, these mussels may actually contribute to the proliferation of harmful algal blooms, such as the one last summer in Lake Erie that resulted in the loss of drinking water to approximately 400,000 citizens in Ohio. In some cases, these potentially toxic cyanobacteria in the Great Lakes are also invasive, originating in subtropical areas but now adapted to northern climates presumably in response to warming temperatures¹².

3. Economic Impacts of Invasive Species

Perhaps surprisingly, there have been very few rigorous economic analyses quantifying the collective economic impact of AIS in the Great Lakes. The Anderson Economic Group (AEG)¹³ has performed perhaps the most rigorous analysis to date; in their research, they found that many prior studies have aggregated cost estimates of AIS, but the original sources of data were lacking. The AEG study conservatively estimated, using imperfect data, that the overall aggregate annual cost of AIS to the Great Lakes region is significantly greater than \$100 million. In Michigan, industries especially affected by AIS include power generation, industrial facilities, tourism, and sport and commercial fishing, which account for 30,000 jobs and almost \$12 billion in total sales volume based on 2010 data¹³.

While there is no doubt that the recreational and commercial fisheries industry is seriously imperiled by AIS, the actual economic cost will depend on the specific invasive species and the magnitude, intensity, and duration of its impact. The current value of the Great Lakes fishery is estimated to be in the \$4-7 billion range. A recent study found that in the U.S. waters of the Great Lakes, commercial fishing is harvesting an average of 19.3 million pounds of fish product for resale, with an ex-vessel value (i.e., the quantity of fish landed by commercial fishermen multiplied by the average price [ex-vessel price] received by them at the first point of sale) of \$22.5 million (in 2010 dollars)¹⁴.

4. Management Implications

AIS are one of the greatest, if not the greatest, threats facing the Great Lakes. They have disrupted the Great Lakes ecosystem and have resulted in profound economic distress to our region. Although the majority of invasive species do not end up disrupting the native ecosystem, I believe in the precautionary principle—why take the chance? However, this type of vigilance can be expensive, so it is critical that we use peer-reviewed science and best professional judgment in deciding where, when, and how to establish surveillance.

We must be coordinated in our approaches to 1) monitor our waterways to keep new AIS from getting into the Great Lakes; 2) quarantine AIS species when necessary and where possible; and 3) eradicate AIS when feasible. With respect to monitoring and treatment, it is critical to recognize that in a hydrologically connected system such as the Great Lakes, the ability to control AIS is only as strong as the weakest link in that hydrologic chain. Regardless of how vigilant or aggressive Michigan may be in dealing with AIS, its waters remain vulnerable if any of the other 7 Great Lakes states or 2 Canadian provinces are not equally vigilant or aggressive. And this concept of vulnerability applies to any connected ecosystem that crosses jurisdictional boundaries, whether it is aquatic or terrestrial.

My comments regarding vigilance and connectivity are particularly appropriate given the growing concerns in the Great Lakes region over Asian carp, which are hovering at the gateways to the Great Lakes. They have received a lot of attention and funding. As I noted in my remarks, I believe in the precautionary principle. However, at the same time we know that there are an estimated 950 trillion invasive quagga mussels at the bottom of Lake Michigan, actively filtering the water column, reducing nutrient levels, and literally sucking the bioenergetic life out of Lake Michigan. Without adequate supplies of nutrients and algae, the fish that depend on these items will eventually starve. And this problem currently receives far less attention than Asian carp, despite the fact that quagga mussels are already here and are having impacts, albeit less visible to the naked eye because they are located beneath the lake surface, and of course, they do not jump out of the water.

By no means am I trying to minimize the threat of Asian carp—I am merely trying to emphasize that we need 1) a coordinated effort to tackle invasive species instead of jumping from one crisis to another; and 2) good science to make informed management decisions. I know science is not the ultimate answer—science helps inform policy but does not dictate it; there are many other factors that come into play. But, let me leave you with this thought, taken from Peter Gleick, one of the foremost water resource scientists on the planet: *It's very difficult to make good public policy without good science, and it's even harder to make good public policy with bad science.*

Thank you again for the invitation to appear today.

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Mr. BUCK. Thank you, Dr. Steinman.
The chair recognizes Dr. Beck for a 5-minute opening.

STATEMENT OF K. GEORGE BECK, PH.D.

Mr. BECK. Chairman Buck, Ranking Member Lawrence, and honorable members of the committee, thank you for the opportunity to testify before you today. I am George Beck, and I am a professor of weed science at Colorado State University. Today I represent the Healthy Habitats Coalition, and we are a diverse alliance dedicated to improving invasive species management in our country.

In spite of almost 3 decades of efforts by many organizations working to persuade the Federal government to do a better job controlling and managing invasive species, little progress has been made. Zebra and quagga mussels are in the Great Lakes, and Asian carp is poised to invade those bodies. Cheatgrass, knapweeds, and tamarisk abound in the west; Burmese pythons, melaleuca, and hydrilla are wreaking havoc in Florida. Emerald ash borer and other invasive insects are invading the north, east, and Midwest. All of these are spreading rapidly, and every State has invasive species without exception.

Cheatgrass alters habit so significantly that it is clearly linked to the decline of the greater sage grouse and its habitat. We possess, however, the knowledge and ability to recover cheatgrass infested safe grass habitat if we would just seize the initiative to do so. For example, CSU weed scientists just completed a comprehensive study to demonstrate such success, and we also have developed approaches that target and eliminate the cheatgrass soil seed reserve, which then will provide the best opportunity to recover native species habitat.

The invasive species conundrum in the U.S. is not necessarily due to a lack of knowledge. Rather it is because of chronically poor Federal land management agency performance around managing invasive species. And this is a reflection of chronically poor administrative leadership concerning invasive species.

Leadership from the National Invasive Species Council is practically non-existent. NISC is made up, of course, of most of the President's Cabinet. Most prominently, the members are the co-chairs, Secretaries of Agriculture, Commerce, and Interior. Frankly, NISC could be dissolved, and the funds used to operate that body should be spent on decreasing the population abundance of invasive species and recovering native species habitat.

This poor Federal performance is due to at least four things that we have been able to identify: inconsistent budgets and non-transparency in the invasive species budgeting process, a lack of collaboration, prioritization, and on-the-ground performance with State and local governments, using NEPA as an excuse for inaction or justification to postpone making timely management decisions, and poor administrative leadership to develop appropriate invasive species public policy, management, and budgetary action.

The solution to these problems has been introduced as bills, H.R. 1485 and S. 2240, the Federal Lands Invasive Species Control, Prevention, and Management Act. The bills focus on the Forest Service, BLM, National Park Service, and Fish and Wildlife Services. These are the major Federal land management agencies.

The bills require agencies to develop an invasive species strategic plan that fosters agreements with States and local governments. The bill also has categorical exclusions that will protect high-value sites from invasive species, fully support and facilitate the development of early detection and rapid response, and then years and years of analysis to approve new management tools. The bills also require invasive species population to be decreased by 5 percent net annually to stay ahead of expansion rates, and change the spending parameters. And these would be 75 percent of invasive species funds to those agencies would have to be put on the ground. Not more than 15 percent of those funds can be spent on awareness and research, and up to 10 percent on administration. So the bulk of the money will be directed towards healing the problem.

HHC has many supporters for these efforts, including an invasive species resolution from the Western Governors Association and direct support from Governor Butch Otter from Idaho, Governor Cecil Andrus, who is the former governor of Idaho and a former Secretary of Interior, and Governor Martinez from New Mexico. There is no Federal administrative leadership on invasive species. It is up to Congress to pass strong leadership and pass these bills. Doing so will place our country on the road to begin solving the invasive species problem. We must stop kicking this can down the road.

Thank you again for this opportunity to share HHC's thoughts on invasive species management in the U.S.

[The statement of Mr. Beck follows:]

Effective and Efficient Invasive Species Management

Dr. George Beck
 Professor of Weed Science
 Colorado State University
 Chair, Healthy Habitats Coalition

Chairwoman Lummis, Ranking Member Lawrence, and Honorable Members, my name is Dr. George Beck. I am a professor of weed science at Colorado State University where I have worked on the management of invasive weed species for 30 years. Today I represent the Healthy Habitats Coalition, a 501(c)3 entity, which is a diverse coalition of state and county land managers, conservation organizations, private companies, industry and academics such as myself. We have focused on improving invasive species management in our country since a nine state weed summit in 2008.

Invasive species is an insidious issue. These harmful organisms cause numerous detrimental environmental effects and cost Americans over \$120 billion annually (Pimentel et al., 2005). Damage worldwide caused by invasive species is valued at \$1.4 trillion each year, about 5% of the global economy (Pimentel et al., 2001). The interactions of invasive and imperiled species are of particular concern because invasive species populations expand exponentially and disrupt evolved ecological relationships. For example, cheatgrass (*Bromus tectorum*) and other invasive annual grasses that are native to the Mediterranean region and Asia have invaded the western U.S. and dramatically altered ecosystems. Cheatgrass increases fuel loads on invaded rangeland, which in turn alters wildfire characteristics such as frequency and intensity. These effects are especially damaging when disturbance regimes exceed the variation to which native communities are adapted thus causing plant and animal community changes and ecosystem-level transformations. Such alterations are the hallmarks of invasive species and why they are considered insidious and must be managed.

Cheatgrass' propensity to alter fire regimes poses a major threat to sage-grouse habitat in the western U.S (Crawford et al, 2004). Cheatgrass fueled fires destroys sage-grouse habitat and impacts the survivability of sage-grouse broods (Rhodes et al, 2010) and the link between cheatgrass and other annual grasses and decline of sage-grouse habitat is very clear. As an example, Colorado State University researchers recently completed a comprehensive study to recover cheatgrass infested rangeland for wildlife habitat (Beck 2014; Appendix Tables 1-3). We possess the knowledge and ability to recover these infested areas for sage-grouse habitats if we take the initiative. We also are evaluating a new herbicide, Esplanade, that will allow us to target and eliminate the soil seed reserve of invasive annual grasses, which will provide the greatest opportunity to recover native habitat (Sebastian et al, *in press*)

The Invasive Species Conundrum

The U.S. is vexed with numerous invasive species – Asian carp and zebra mussels in the Great Lakes, cheatgrass, knapweeds and tamarisk in the west, Burmese pythons, melaleuca, and hydrilla in Florida, Emerald ash borers in the Northeast and Midwest ... the list is daunting and

continuously getting worse. Invasive species occur in every state and are transported or move across all borders. We must take immediate action to avoid their draconian and magnificent ecological and economic impacts.

The chronic poor performance by Federal land management agencies with regard to managing invasive species prompted the formation of the Healthy Habitats Coalition to develop a national solution for the harm caused by invasive species in our country. Four GAO or OIG reports clearly indict the poor Federal land management performance for invasive species. Federal lands are breeding grounds for invasive species because of inconsistencies for invasive species budgeting; lack of collaboration, on the ground effort, and prioritization with states and local governments; using NEPA as an excuse for inaction or as justification to postpone making management decisions in a timely manner; a general failure to grasp the magnitude of the invasive species problem; and poor Administrative leadership around developing appropriate invasive species public policy, management and budgetary action.

Invasive species lack the biological and ecological relationships that regulate the populations of native species such that the latter rarely are problematic natural resource issues. Personnel in Federal agencies are polarized about managing invasive species, which creates the conundrum where a portion of the workforce is committed to solving this problem while a seemingly much larger portion believes it to be a waste of time, which is ludicrous given the tremendous economic and severe natural resource impacts that these species cause in our country annually! An example of this poor attitude was captured by the Hawai'i Free Press on June 19, 2015 when Ken Werner, PPQ, APHIS Pacific States and Territories was quoted "the truth is, we just don't care that much about invasive species." This attitude is totally unacceptable given the annual \$120 billion price tag that American taxpayers absorb much less the \$1.4 trillion international problem that equates to 5% of the global economy!

Federal leadership – When President Clinton penned Executive Order 13112 that created the National Invasive Species Council and raised the level of responsible leadership to the Cabinet Secretaries, most people in the invasive species community lauded the effort and thought we would finally resolve the invasive species problem because politically, it was placed at a very high level within the Federal government. We were wrong! All that was accomplished was the politicizing of a biological problem, and even that was insufficient and ineffective. It created opportunity to feign that real accomplishments were being made because meetings were continually held to celebrate meager success at best but no meaningful progress occurred. The Invasive Species Advisory Committee, which continues to meet to this very day, helped develop several national invasive species management plans that were never implemented and made numerous recommendations to Federal agencies that seemingly were always ignored.

I served on ISAC for 6 years (from 2002 through 2008) and we even wrote and published a scientific paper carefully outlining what constitutes an invasive species and perhaps more importantly what does not constitute an invasive species. To my knowledge, this paper has not been used by Federal agencies in spite of them being the primary audience for that work conducted on their behalf by a Federal advisory committee. This wasteful use of limited funds

continues to this day but NISC has done little if anything about coordinating and fostering cooperative efforts among agencies, states, and local governments as was initially thought with regard to invasive species management. NISC should be dissolved and the funds used to operate that body instead should be spent to decrease the population abundance of invasive species and recover native species habitat!

In previous hearings, the Healthy Habitats Coalition outlined the terrestrial weed problem. Using data collected from Federal land management agencies in 2009 – both acres currently infested at that time and the number of acres treated for weed control – we predicted the acres infested with invasive weeds would double in 2017 (Figures 1 and 2). In 2015, the BLM, reported more than a doubling of the 35 million acres reported in 2009 to over 77 million infested acres in 2015 ... 2 years earlier than HHC predicted!

The inaction by Federal agencies is fueled by inconsistent NEPA compliance - the variable interpretation of NEPA by each agency creates a redundant and inefficient waste of public money. Categorical exclusions in H.R.1485/S.2240 will resolve this dilemma by creating a framework of measurable and tactical methods.

Fig 1. Example: Federal Weed Issue in 2009

35,000,000	375,000	1.1%	4,155,000	38,780,555
7,000,000	390,000	5.6%	793,200	7,403,200
2,600,000	66,000	2.5%	304,080	2,838,080
2,500,000	200,000	8%	276,000	2,576,000
81,709	27,805	34%	6,469	60,372
2,300,000	345,000	15%	234,600	2,189,600
Not available	200,000	Not available	Not available	-

FY09 data provided by Federal Agencies

* DOD estimated

* Annual average weed spread rate is 12%.

Fig 2. HHC Projected the Infested Acres in 2009
Millions of Federal Acres

Year	Elapsed Years	Beginning Infested Acres	Acres Treated & Restored (3.2% of Begin)	Infested Acres After Treatment	12% Annual increase	Year End Infested Acres
2009	1	49.48	-1.60	= 47.88	+ 5.75	= 53.63
2010	2	53.63	-1.74	= 51.89	+ 6.23	= 58.12
2011	3	58.12	-1.89	= 56.23	+ 6.75	= 62.98
2012	4	62.98	-2.04	= 60.94	+ 7.31	= 68.25
2013	5	68.25	-2.21	= 66.04	+ 7.92	= 73.96
2014	6	73.96	-2.40	= 71.56	+ 8.59	= 80.15
2015	7	80.15	-2.60	= 77.55	+ 9.31	= 86.86
2016	8	86.86	-2.81	= 84.05	+ 10.09	= 94.14
2017	9	94.14	-3.05	= 91.09	+ 10.93	= 102.02
2018	10	102.02	-3.31	= 98.71	+ 11.85	= 110.56

HHC projected a 61.1 million acre increase (doubling) by 2017

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The Invasive Species Solution:

The invasive species problem in America requires a legislative repair and that solution has been outlined by Congress; H.R. 1485 – the Federal Lands Invasive Species Control, Prevention, and Management Act was introduced early in 2015 and a Senate companion bill, S.2240, was recently introduced. The bills focus attention on four Federal land management agencies; the Forest Service, Bureau of Land Management, Fish and Wildlife Service, and National Park Service. Categorical exclusions are a key component of the bills and not only will that help defend affected high value sites and fully support and facilitate Early Detection and Rapid Response efforts, it will end the years and years of analysis to approve use of new management tools that Federal land managers desperately need to be effective and efficient.

H.R.1485 and S.2240 also foster cooperative agreements between Federal agencies, state and local governments, and private entities to manage invasive species collaboratively. The priorities for these cooperative agreements will be determined by state Governors working with federal agencies and will engage all affected parties collectively using appropriate expertise and thus reducing redundancy and capacity barriers..

As an example H.R.1485 and S.2240 require that terrestrial weed management efforts deplete invasive species populations by a net of 5% annually, which in the case for invasive weeds means at least 15% of existing infestations must be decreased annually to stay ahead of the invasive weed expansion rates (Figures 3 and 4). This 5% annual reduction will allow us to successfully manage invasive weed problems as opposed to simply wasting funds.. Biologically

acceptable net decreases for other invasive taxa will have to be determined and passage of H.R1485/S.2240 will foster acquisition of that knowledge by creating and using a required strategic plan.

Fig 3. 2009 Solution: Treat & Restore 15% Annually
Millions of Federal Acres (HHC 2009 Estimate)

Year	Elapsed Years	Beginning Infested Acres	Acres Treated & Restored (15% of Begin)	Infested Acres after treatment	12% Annual increase	Year End Infested Acres
2009	1	49.48	-7.42	= 42.06	+ 5.1	= 47.16
2010	2	47.16	-7.07	= 40.09	+ 4.81	= 44.90
2011	3	44.90	-6.73	= 38.17	+ 4.57	= 42.74
2012	4	42.74	-6.40	= 36.34	+ 4.35	= 40.69
2013	5	40.69	-6.10	= 34.59	+ 4.15	= 38.74
2014	6	38.74	-5.80	= 32.94	+ 3.95	= 36.89
2015	7	36.89	-5.53	= 31.36	+ 3.76	= 35.12
2016	8	35.12	-5.26	= 29.86	+ 3.58	= 33.44
2017	9	33.44	-5.01	= 28.42	+ 3.41	= 31.83
2018	10	31.83	-4.77	= 27.06	+ 3.25	= 30.30

19.2 million acre decrease over 10 years (39%)

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Fig 4. 2016 Solution: Treat & Restore 15% Annually
Millions of Federal Acres (HHC 2015 Estimate)

Year	Elapsed Years	Beginning Infested Acres	Acres Treated & Restored (15% of Begin)	Infested Acres after treatment	12% Annual increase	Year End Infested Acres
2016	1	100.0	-15.0	= 85.0	+ 10.2	= 95.2
2017	2	95.2	-14.2	= 81.00	+ 9.7	= 90.7
2018	3	90.7	-13.6	= 77.1	+ 9.2	= 86.3
2019	4	86.3	-12.9	= 73.4	+ 8.8	= 82.2
2020	5	82.2	-12.3	= 69.9	+ 8.4	= 78.3
2021	6	78.3	-11.7	= 66.6	+ 8.0	= 74.6
2022	7	74.6	-11.2	= 63.4	+ 7.6	= 71.0
2023	8	71.0	-10.6	= 60.4	+ 7.2	= 67.6
2024	9	67.6	-10.1	= 57.5	+ 6.9	= 64.4
2025	10	64.4	-9.7	= 54.7	+ 6.6	= 61.3

33.9 million acre decrease over 10 years (36%)

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The bills also improve the efficient use of federally derived public monies by requiring affected Federal agencies to spend at least 75% of their invasive species funds on-the-ground to directly manage the problem while capping awareness and research at 15% of those funds and holding administrative costs to 10% or less. The efficiency and effectiveness of federal expenditures to manage invasive species will be dramatically improved and we know this can occur because of an outstanding model program recently invoked in the southwestern U.S. – Restore New Mexico – where thousands of acres have been recovered from invasive species and other expanding problems. H.R.1485 and S.2240 also will hold Federal agencies accountable for their invasive species efforts and overcome weaknesses and negative attributes identified in GAO and OIG reports.

It is up to Congress to seize control and pass a badly needed legislative repair for the invasive species issue. Simply put, we must create a paradigm shift for invasive species management with an authorization and appropriation generated from required budgets that flow from a strategic plan.

This constant procrastination creates the perfect environment for invasive species success. A significant problem exists within most Federal agencies where some land management personnel simply do not care to manage invasive species regardless that such is required by law. We must stop kicking the invasive species management can down the road. H.R.1485 and S.2240 represent the necessary staging action that will begin to resolve our nation's invasive species problems!!

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Appendix

Table 1. Cheatgrass control and cover in 2011 and 2012 at Rulison¹.

Treatment	Rate	Cheatgrass % Control 2011	Cheatgrass % Cover 2011	Cheatgrass % Control 2012	Cheatgrass % cover 2012
Non-treated	0	0 d ¹	75 a	0 d	87 a
Journey	1 pt/A	87 b	14 c	64 b	36 b
Landmark	1 oz/A	100 a	0 d	83 a	16 c
Matrix	4 oz/A	100 a	0 d	90 a	9 cd
Plateau	8 fl oz/A	33 c	66 b	18 c	83 a
Spike	0.38 lb/A	100 a	0 d	92 a	6 d

¹ Data subjected to analysis of variance and means followed by the same letter are not different (P<0.05).

Table 2. Herbicide by grass species interaction where frequency of seeded grass species in 2012 was dependent upon herbicide treatment used to control cheatgrass in 2010 at Rulison¹.

		Grass Species					
		Bluebunch wheatgrass	Indian ricegrass	Sandberg bluegrass	Sand dropseed	Squarreltail	Western wheatgrass
Site	Herbicide	% Frequency/plot (100 ft ² ; 4 x 10 ft rows)					
Rulison	Non-treated	7 e-i	1.8 k-q	2.3 j-q	1.1 n-s	1.4 m-s	0.2 s
	Journey	44 a	3 i-o	8 e-h	2.4 i-q	19 bcd	10 d-h
	Landmark	31 abc	5 g-k	5 g-l	8 e-h	41 ab	11 d-g
	Matrix	41 ab	1 o-s	7 e-i	0.6 qrs	15 cde	6 f-j
	Plateau	4 h-m	0.8 p-s	1.2 n-s	1.5 m-s	1.1 n-s	0.3 rs
	Spike	13 def	0.6 qrs	1.6 l-r	4 h-n	9 d-h	3 i-p

¹ Data subjected to a general linear models mixed procedure producing means and standard errors; means followed by the same letter are not different (P<0.05). Means in red are statistically better than means in non-treated plots within a column.

Table 3. Herbicide by forb species by year of seeding interaction where forb species frequency in 2012 was dependent upon the herbicide used to control cheatgrass in 2010 and the year of seeding¹.

			Forb Species					
			Gooseberry leaf globemallow	Lobeleaf groundsel	Dusty penstemon	Lewis flax	Sulphur buckwheat	Low fleabane
Rulison	Site	Yr Sd	Frequency/plot (100 ft ² , 4 x 10 ft rows)					
			0 k	1.7 f-k	0 k	1.7 f-k	0 k	0 k
	2010	Control	7 b-e	5 c-g	7 b-f	4 c-h	0 k	0 k
	2011		0 k	7 b-e	0 k	26 a	0 k	2 e-j
	2010	Journey	0 k	30 a	0.1 jk	10 a-d	0 k	0 k
	2011		0 k	5 c-g	0 k	0 k	0 k	13 abc
	2010	Landmark	0 k	0.4 jk	0.7 ijk	1 h-k	0 k	0 k
	2011		0 k	6 b-f	0 k	0 k	0 k	0 k
	2010	Matrix	0 k	1.4 g-k	8 bcd	17 ab	0 k	0 k
	2011		0 k	6 b-f	0 k	4 c-h	0 k	0 k
	2010	Plateau	0 k	19 ab	0.6 ijk	1.8 e-k	0 k	0 k
	2011		0 k	0 k	0 k	3 d-i	0 k	0 k
	2010	Spike	0 k	0 k	0 k	0 k	0 k	0 k
	2011		0 k	0 k	0 k	0 k	0 k	0 k

¹ Data subjected to a general linear models mixed procedure producing means and standard errors; means followed by the same letter are not different (P<0.05). Means in red are statistically better than at least one of the non-treated means within a column.

Mr. BUCK. Thank you, Dr. Beck, and go Rams.
[Laughter.]

Mr. BUCK. The chair will now recognize members for 5 minutes, and will recognize himself first.

Dr. Reaser, how does NISC coordinate its work with Federal agencies, and States, and local communities to combat invasive species?

Ms. REASER. Thank you for the question. NISC coordinates work through a series of tiers of coordination. NISC itself, as you are aware, are the Secretaries and administrators of the 13-member departments. And then within the NISC structure, broader structure, we also have policy-level leads and more technical-level leads. There are interdepartmental coordination mechanisms throughout that structure. There are also coordination mechanisms between NISC and other structures focused on invasive species, such as the Aquatic Nuisance Species Task Force. And there are regular joint working groups, and joint committees, and joint products with that group and others.

And then there are on-the-ground activities where Federal agency representatives are collaborating with States, and tribes, and other stakeholders at the ecosystem level or on a species-by-species specific level.

Mr. BUCK. What is the annual budget for NISC?

Ms. REASER. For the NISC staff?

Mr. BUCK. What is the total budget, I guess, and then if you want to break it down, you can explain.

Ms. REASER. Okay. So the approximate budget for the NISC staff is about a million dollars per year, and about a third of that 30 percent is spent on administering the Invasive Species Advisory Committee.

Mr. BUCK. And appropriately what percentage of the overall budget goes to administrative expenses?

Ms. REASER. So for the NISC staff just to clarify, it is about 65 percent would be salary, travel, basic operations. And then approximately 30 percent would be for the advisory committee's administration.

Mr. BUCK. Dr. Beck, cheatgrass continues to cause problems with sage grouse habitat. Could you please describe the current status of the cheatgrass threat and what actions have been taken to mitigate its spread?

Mr. BECK. Cheatgrass is a controversial plant relative to how much area it occupies. I have heard data everywhere from 50 million to over a hundred million acres, so it is really hard to know.

It has not found its way everywhere. For example, 10 years ago was the first time cheatgrass showed up in the Gunnison Basin in South Central Colorado. And in the Kremmling area, which is, oh, 150 miles north, it has only been there for about 5 years, or at least that is what people say.

So it continues to find new homes. The Great Basin is obviously very inundated with it. It is not so bad that you can close your eyes and point and be looking at cheatgrass whether you know it or not, but we are getting close to that. It is there every year. I mean, I hear people talk about, well, it is not a bad year for cheatgrass, and I say wait until June. It is the same very June. And I even

had a student in one of my classes tell me that his mother's neighbor was running around picking this grass from around his yard in the foothills. I think it was above the Estes Park area. And she wanted to know what he was doing, and he said, well, this does not require any water, I do not know what is. And he was planting cheatgrass. So, you know, Pogo was right when he said, we have met the enemy and they are us.

So we continue to foster its spread through all kinds of means, some of them inadvertent, and some of them not. But the problem is worsening constantly.

Mr. BUCK. And what do you think NISC can do to help with the cheatgrass problem?

Mr. BECK. NISC's role is to coordinate with the Federal agencies, and I educate a lot in the public. Half of my appointment is extension, and so I must give about 50 to 75 presentations a year through Colorado alone, and I just do not see where any coordinating is having effect. In fact, I have visited with some Federal employees who do not even know NISC exists. So there is a transitional loss someplace between Washington, D.C. and the rest of the country.

Mr. BUCK. Okay. Thank you. My time is almost up, and I recognize the gentlelady from Michigan for 5 minutes.

Ms. LAWRENCE. Thank you, Chair. Ms. Reaser, I understand that the one update that has been made to the management plan was back in 2008. Is that correct? So help me understand why the Council has largely not updated the management plan, and when will it be updated?

Ms. REASER. Okay. So let us step back to 2001.

Ms. LAWRENCE. Okay.

Ms. REASER. And thank you for the question. I think it is an important one. As you know, in the executive order, there is a request for the plan to be revised every two years. The reasons behind that were, of course, to set priorities, raise visibility, and so forth, all reasonable criteria.

When the original plan was created, there was a tremendous amount of enthusiasm among the departments for this new culture of collaboration, and the request was to bring priorities together in a comprehensive manner to use the word you used previously. The second management plan followed the pattern of the first management plan. It was a revision thereof, and so it had approximately 90 action items in it as did the first one. There were 170 total.

The second management plan ran from 2008 through 2014. Since that time, there has been a process of moving the priorities forward from the first two management plans collectively. There has also been a process of looking at what items within those management plans require further work on an evaluation process going forward.

There has been a delay in the process of moving it to the third management plan for a couple of reasons. One, there had been unanticipated staff turnovers and vacancies that could not be accounted for, and did have a significant impact on process. And then more recently, there was a desire to hire my position into place to take leadership over the third management plan, which I am now in the process of doing. And we are looking forward to having that available sometime early next year.

Ms. LAWRENCE. Okay. I wanted to ask if it was achieving the objective of reducing the invasive species rate by 5 percent every year. Are you anywhere close to that goal?

Ms. REASER. So the Invasive Species Management Plan itself is a priority setting mechanism, so each item within the plan has different goals and objectives. Only a small percentage of those would be dedicated for activities related to weeds on the ground. As those projects move forward, each of them is going to have a goal that is context specific. A number of 5 percent, 15 percent, 20 percent is not necessarily going to be fit to purpose for all circumstances.

So each of the activities undertaken through the plan or otherwise is going to set a goal that makes sense context specifically.

Ms. LAWRENCE. So are you reaching any of those goals?

Ms. REASER. Yes, many of those goals have been reached through this process.

Ms. LAWRENCE. One of the things that the plan, it is my understanding that we as members of Congress should know that the plan is being updated, and I can tell you that has not been a reality. So you are saying, you are making a commitment here today that your plan will be updated by the spring of next year. And I expect that we will know that that has happened under your leadership. Is that correct?

Ms. REASER. I am willing to be personally accountable on that one. There are not many things that I can promise you, but that one I can assure you under my leadership will happen as soon as it is feasibly possible.

Ms. LAWRENCE. I am going to have to come back for another round of questions, but I do want to ask this. With your knowledge now that you are in the position, do you have the funds or the resources to actively, once we get a plan, to implement it and to be able to state to Congress and to the people of the United States that we have a very proactive and committed plan to addressing the Invasive Species Act?

And I love the comparison made between endangered species. I think we get a lot of attention and affection when we start talking about endangered species where you need to really talk about the invasive species because that is a major component of why we have endangered. So when you submit the plan, will you be able to implement it with your budget and resources?

Ms. REASER. That is a very good and pertinent question. We will make sure that where we have good alignment with current resources that will be well recognized. There may be cases where there is an action item in the plan to mobilize additional resources or find efficiencies with existing resources, and we will also work to identify that as well.

Ms. LAWRENCE. You are not willing to say if you have it yet or not because that is what you are saying.

Ms. REASER. We have not finished the plan yet.

Ms. LAWRENCE. Okay.

Ms. REASER. So it would be premature for me —

Ms. LAWRENCE. I will give you that.

Ms. REASER. Thank you.

Ms. LAWRENCE. Thank you.

Mr. BUCK. I thank the lady from Michigan, and I recognize the gentleman from Arizona.

Mr. GOSAR. Thank you, Mr. Chairman. Now, Dr. Reaser, the Lower Colorado River is in the frontlines of battling the quagga mussel. So, Dr. Steinman, we join you, and the salt cedar. The mussels threaten the Hoover Dam, the Davis Dam, Parker Dam, Imperial Dam, and the Central Arizona Project, all of which are part of my district in Arizona. These water systems supply electricity and drinking water to millions across the Southwest.

Now, while the problem is massive in scale, its implications are felt locally and require local action to mitigate their spread. Municipal leaders and community organizations in my district, such as the Lake Havasu Marine Association, are prepared and willing to do their part, but need resources to do so.

So my first question. What specific authorizations currently exist for funding mitigation programs that combat these mussels or salt cedars on a State or local level?

Ms. REASER. Thank you for the question. I do not have specific information available on those authorities, but I would be happy to make that information available to you.

Mr. GOSAR. I would like to get them because I think the gentleman, Dr. Beck, was making this comment. We have a lot of surface activity, but nothing down on the local level, and it is imperative that we leverage those resources.

I would also like to know what type of flexibility exists with matching funds from local, and States, and private partnerships for these authorizations. Do you have that either?

Ms. REASER. Thank you for the question. I am going to invite Anne Kinsinger to address the answer.

Ms. KINSINGER. I do not have a comprehensive answer on that, but I did want to note that the Fish and Wildlife Service does work to coordinate the development of State wildlife action plans. And when a species is listed as a species of management concern in those plans, then grants are available. So I do not think that is the full answer, so I think we will need to get back to you with some other authorities. But that is a major —

Mr. GOSAR. I would like to know that.

Ms. KINSINGER. Yes.

Mr. GOSAR. Stay right there. I am going to jump ahead here. So according to Executive Order 131112, NISC is charged with producing a national management plan every 2 years that sets forth its goals for treating and eradicating invasive species. However, since 1999, NISC has only released two management plans, those in 2001 and 2008. Can you please explain why there has been such a delay in producing a management plan, and when does NISC plan to produce a national management plan?

Ms. REASER. Thank you for the question. To make it short since I have answered a version of this already, the management plan between 2014—that is when the second management plan sunsetted—sorry—between 2012, and this management plan, there has been a process in place to identify which items in the second management plan need to be moved forward to the third management plan. A number of items are ongoing understandably. Also

Mr. GOSAR. I get that, and I see the gentleman over here just wriggling, which is what I am doing, is that there is so much bureaucracy up here, there is nothing trickling down to the local levels. And this is what is frustrating about this is that we always have to set goals. We have to have objectives, and then we have to have outcomes. And if we do not have people on the local level included in those, we are never going anywhere.

And this is what is so frustrating with these groups. I have got salt cedars on one side. I have got quagga mussels everywhere. I have bison in the Yellowstone National area in the Grand Canyon. This is frustrating when you are talking about invasive species because you have people with expertise and the manpower and will-power to do this, but they cannot get any jurisdiction or leverage coming out of your Department. Does that make sense to you?

Ms. REASER. I certainly understand and concur with your frustrations in terms of the priority of getting resources to the ground

Mr. GOSAR. Yes, but it is even worse than that because not just getting the resources. But these plans seem to get lost in your bureaucracy that are well intentioned and have great outcomes, but they cannot get any jurisdiction to say we are going to work with you, let us move forward with this plan. I mean, it is just absolutely ludicrous with the folks back home what is going on with this.

Ms. REASER. I understand your concerns, and they are warranted. This is a substantial issue of concern that deserves priority attention. I can assure you that the third management plan will be available early next year.

Mr. GOSAR. Well, I will have to stay. I am running out of time. I will stay —

Mr. BUCK. The chair thanks the gentleman from Arizona. I just want to make one thing clear. Dr. Reaser, I want to make sure we have the correct spelling of the assisted witness in this matter. If you could just spell your name for the record, I would appreciate it.

Ms. KINSINGER. Yes, I am Anne Kinsinger. That is Anne with an "E." Last name K-i-n-s-i-n-g-e-r.

Mr. BUCK. Thank you very much. And the chair now recognizes the gentlelady from the Virgin Islands for 5 minutes.

Ms. PLASKETT. Thank you, Madam Chair, and Ranking Member Lawrence. Good afternoon, ladies and gentlemen, and I am so appreciative of you coming here to discuss this issue. Invasive species affect our economy, our environment, human health in many instances.

And although we have not focused on it today, and I did not hear it in your testimonies, invasive species, such as lionfish, brown tree snake, and even invasive Sargassum seaweed, have had a devastating effect on all aspects of the economic development, agricultural production, and tourism, particularly in my district in the United States Virgin Islands, and in some parts of southeastern United States.

I note that several of my colleagues from Florida have introduced legislation related to the lionfish, which are an invasive, voracious eating species that is not native to the waters in which they have

come, and have completely attempted in their eating habits to annihilate our own local fish. And our fishermen are up in arms. Our Department of Planning and Natural Resources are trying to create ways to deal with this invasive species both in the Virgin Island, Puerto Rico, and particularly in areas of Florida as well.

And there has been success in controlling a few of the invasive species, but it is clear you all are completely aware that we need to do more. Ms. Reaser, according to the submitted testimony, you have taken on some really important initiatives. And one of those initiatives is to focus on national priorities and targeted outputs. I wanted to know if you could tell us what the national priorities are, and what do you mean by "targeted outputs?" And specifically, of course, you know, my interest would be if the territories are included in those priorities.

Ms. REASER. Certainly the territories are explicitly included in the work we are doing, and thank you for highlighting them. And in particular, they do face many challenges that are particular to island regions. As you are probably well aware, invasive species are one of the number one threats to biodiversity in island context, and that has certainly been the case in the U.S. territories.

The national priorities are set within the National Invasive Species Management Plan in terms of how the Federal government is going to work together, but also with States, territories, tribes, and other partners. So each management plan sets forward a new set of priorities, and so we will have a new set early this next year.

Ms. PLASKETT. And how is that determined, in what way? Is it by population? Is it based on economic determinants? What sets those priorities?

Ms. REASER. Anne Kinsinger would like to address that.

Ms. KINSINGER. Okay. Hi. I just wanted to say I am not speaking to what will be in the plan, but that there are a number of scientifically-based techniques that we can use. One of them is model the invasivity of the animal once it is detected and try to get a sense of how quickly it will spread, and try to be able to understand what kind of impacts it is going to have, because there are many invasive species that come to the country and really do not cause much damages, do not spread very quickly.

So we have a variety of tools that we are trying to use that managers and policy makers can deploy to understand how quickly and how damaging from both an ecological and an economic perspective.

Ms. PLASKETT. Because the reason I was asking what are the benchmarks and how do you determine that is more often than not, in my area of the Virgin Islands, because it is seen that we are small in numbers, we are not given the priorities. And I just wanted to share something with the committee today, and I am asking that we show this picture, and I will pass this around.

That this is what happens when the invasive species, the Sargassum seaweed, which if you think about an island economy that is based on fishing and tourism, if that is sitting on your beach, it is going to affect your tourism tremendously on a regular basis. And that is on every beach in the Virgin Islands these last couple of months. So thank you, and I would ask unanimous consent to include this in the record.

And I just wanted to then close with, and I know I am running out of time. Mr. Beck, if you could tell us if you feel that there needs to be a change and improvement in controlling this and how we set these priorities.

Mr. BECK. I am not familiar with the seaweed problem other than I am just aware that it exists, so I am not the expert to ask on that. But if we do not have the information, it needs to be dealt with immediately. That seems to be the case with almost every new invasive species, you know. Where are we scientifically on it?

That is an excellent question to ask, and I think we need to address these species unfortunately one at a time, but that is part of the challenge in this. And they all need to be addressed.

Mr. BUCK. With no objection, the picture will be included in the record.

Mr. BUCK. And I would just mention to the gentlelady from the Virgin Island that Dr. Beck and I live close to each other, and we would be glad to go to the Virgin Islands this time of year to look at the seaweed and —

Ms. PLASKETT. Immediately.

Mr. BUCK. Yes, immediately. Great. The chair recognizes the gentleman from Arizona for 5 minutes.

Mr. GOSAR. Thank you, Mr. Chairman. Dr. Reaser, we are going to come back again to Arizona. And as you know, the Tamarisk salt cedar has been spread throughout the Colorado River Basin. It has been especially damaging to areas in Arizona in my district along the Gila River. These invasive and thirsty shrubs steal already limited water to push out native plants, strain agricultural resources, and disrupt economic activity.

In communities where the Tamarisk invasion has developed into crisis, like Buckeye Arizona on the Gila River, local and State leaders have developed action plans to eradicate the shrub and restore natural habitats. However, these mitigation plans, like I alluded to earlier, have gotten lost in the complicated web of Federal invasive species policy, or have been flat out resisted by the Federal agencies themselves.

So what has NISC done to engage communities and to empower them to leverage the local resources and expertise to address problems unique to their area?

Ms. REASER. Thank you for the question. To clarify, NISC itself is the Secretaries' and administrators —

Mr. GOSAR. I understand.

Ms. REASER.—of the 13 member Departments. So they themselves would not be having a direct relationship coordinating with the counties. However, many of the Federal agency personnel working in that region have been involved in multi-stakeholder partnerships. You are familiar, I am sure, with the Tamarisk Coalition.

Mr. GOSAR. Yes.

Ms. REASER. And through those on the ground efforts at better communication and coordination, requests for assistance, individual priority setting, information, exercises, and so forth are brought up through the Federal agencies.

Mr. GOSAR. So now, is there any benefit or streamlining to this process in coordination with American Indian tribes?

Ms. REASER. Thank you for the question. Are you referring to the work with Tamarisk in particular or with —

Mr. GOSAR. With any invasive species, but in this case Tamarisk, yes.

Ms. REASER. Thank you for the question. I cannot answer specifically with regard to Tamarisk. I can answer more broadly if that is of interest.

Mr. GOSAR. Sure.

Ms. REASER. Okay. So within the framework of the Invasive Species Advisory Committee that I mentioned previously, there are two seats dedicated for tribal representatives. There have been five tribal individuals who have filled those seats to date. The tribes are also included in numerous specific actions that are implemented under the National Invasive Species Management Plan. They may participate in specific committees, working groups, or task teams of particular interest to the tribes.

The most recent example would be the outreach to tribes and inclusion of tribal representatives and the development of the early detection and rapid response framework that will be released in the near future.

Mr. GOSAR. Well, but my question is, is there any mechanism in which that can streamline? I mean, they have jurisdictions that are synonymous as a sovereign entity if it exists on their property. Is there a streamlining mechanism? Not just representation, but is there a streamlining possibility in utilizing the tribes within a problem?

Ms. REASER. Thank you for the question. The tribes themselves have not brought to our attention a request for that process. If they did, I think we would take it into consideration to look at ways to coordinate better. We certainly would welcome more tribal participation at all levels of the work within the NISC and the broader NISC framework.

Mr. GOSAR. Gotcha. Dr. Beck, I mean, you have seen this from the ground level. How would you orchestrate something in a comprehensive management plan that addresses the Great Lakes from the Virgin Islands, to Arizona, to the Great Lakes so that we have all these multiple applications going on? I mean, you are with CSU, right?

Mr. BECK. Yes, sir.

Mr. GOSAR. I have got ASU, U of A, NAU. I mean, they are a pretty good resource out there. But how would you manage a plan like that from your level that would address a lot of these things and synchronize them that may not be so bureaucratically top down driven?

Mr. BECK. Well, first, I think is to involve people at the local level. What do they want to do? What is their land use vision, and then adapt from there. And then geographically you have to start up to the high elevation, high waters, and then move downstream from there rather than trying to move up. I have seen it go both ways, and it never works when you try to run upstream. But at any rate, visiting and getting input from the local community is absolutely essential. That is the starting place.

Mr. GOSAR. I know we have been chasing the mussels upstream up to Colorado, so we know your plight there, absolutely.

Mr. BECK. Yes, sir.

Mr. GOSAR. One last question. Dr. Steinman, would you have any other comments in regards to that process?

Mr. STEINMAN. Well, I think the coordination is essential. Without that, things are going to break down. As I mentioned in the oral testimony, written testimony, these invasive species cross jurisdictional boundaries. Any time you have these connected systems, the weakest link provides the problem there. So it is essential that people work together and have a coordinated effort and based on science is really going to be a critical element to make things successful.

Mr. GOSAR. When you empower local people, you find people more adaptive to be protecting, right?

Mr. STEINMAN. Absolutely, and I agree with Dr. Beck in the sense that if you do not what their social values are at that local land value, you know, you are just not going to make a difference.

Mr. GOSAR. Thank you.

Mr. BUCK. The chair thanks the gentleman from Arizona, and recognizes the gentlelady from Michigan.

Ms. LAWRENCE. Thank you, Mr. Chair. Mr. Cameron, I just want to ask a follow-up question. How do you feel the NISC, from your organization, how effective is it? You gave some recommendations. Does the plan drive the results? I would like to hear your opinion.

Mr. CAMERON. Thank you. Thank you, Congressman. A couple of thoughts. The first is a plan is ultimately just a piece of paper. What you really need is commitment at least at the assistant secretary level. More than a commitment, active participation. You need assistant secretaries willing to spend 15 percent of their time worried about invasive species. Frankly, I do not think we have had that for quite a while. You need that leadership in order to drive coordination inside Washington in order to provide air cover, if you will, for the people at the regional level, at the State level who are trying to do the right thing. So a good plan is helpful, it is necessary, but it is by no means sufficient.

What I think is really important, echoing some things we have heard before, is taking a lot of hints from the governors. Your own governor is really invested in the invasive species issues even with Michigan's economic problems. He has budget increases in the State budget for invasives. Governor Hickenlooper has been all over the cheatgrass issue from the very beginning in Colorado.

So the Federal government needs to pay attention to where the governors are coming from. The Federal government can provide a forum for cooperation among the governors. The Great Lakes Restoration Initiative in your part of the country, Ms. Lawrence, is one example of a fairly successful model. Maybe WGA could do the same on cheatgrass, for instance.

Ms. LAWRENCE. Well, Dr. Steinman, I introduced H.R. 1900, the National Sea Grant College Program. And we know it is administered within the National Oceanic Administration, NOAA. Do you believe that Congress should reauthorize it and fund new university research, because one of the things that I am hearing, and who made the quote about good science versus good policy. So would you please comment on that?

Mr. STEINMAN. Thank you, Representative Lawrence. I am a strong supporter of the National Sea Grant Program administered under NOAA, the National Oceanic and Atmospheric Administration. It is really where the science, education, and outreach all come together on a local basis. And even though National Sea Grant seems to have a marine name to it, it applies to the gentlelady as well.

And so, whether it is fresh water, salt water, or estuarine systems, Sea Grant is really there at the local level making a difference educating people and providing the science to help inform those management decisions that need to be made.

Ms. LAWRENCE. You know, one of the things that I really want to drive this point home is that we think about just fish in the water. But there is an additional effect of the zebra mussel, an increase of blue water algae, which resulted in the loss of drinking water to 400,000 Ohio citizens. Can you explain how this invasive species has an impact on our drinking water?

Mr. STEINMAN. Yes, thank you for the question. So the zebra and quagga mussels, as I said, are filter feeders, so they are filtering out the organisms that are in the water. And by doing that, they are clearing the water, and as they clear the water, there is more opportunity for the blue-green algae or cyanobacteria to start to form in that system.

Now, it also needs nutrients as well as the light that is getting through the water. The nutrients particularly in the Western Basin of Lake Erie were coming off of farm fields. You had that combination of fertilizer application, a big rainstorm that moved it all into the lake. And then you had enough light for the blue-greens to grow the cyanobacteria, and because they release a toxin, in this case microcystins, which is toxic to humans, potentially toxic. That is what Toledo Water Supply just decided to shut down.

Now, we have had algae blooms that are actually larger than the one last year that shut down the water supply, but it turned out that they did not grow near where the water intakes were. So really it makes a difference where those blooms are forming, but that combination does create something.

And I want to point out for Ms. Plaskett as well that clearing of the water by the quagga and zebra mussels also results in a proliferation of what we call these green algae, filamentous green algae called cladophora, very similar to your Sargassum that is washing up on the beaches of the Great Lakes and creating what we call muck. And nobody wants to go where that muck is. Just like in the Virgin Islands, we are seeing the same thing in the Great Lakes.

Ms. LAWRENCE. I know I only have a few seconds, but, Dr. Reaser, this is where I want to connect your job with these immediate. So when we have an invasive species affecting drinking water, how does these issues rise to the level of you responding or being able to respond to this? And when you have a situation of Virgin Islands, and everyone sitting here are likely to know what is happening, how do we as a member of Congress know that you are actually responding in attacking this, not just a report.

But what is your action? And I am sorry, sir, I know I am over, but this is important.

Ms. REASER. It is important, and thank you for the question. To clarify again, NISC itself is the Secretaries and administrators of the 13 member departments. And in many cases, issues such as this do not necessarily have to rise to that level to get action. There are hopefully mechanisms in place in most States now and in some territories where there are State-level national invasive species councils. There are also plant councils and aquatic councils, and they can work to bring local levels to State-level attention. State-level attention can then be brought to Federal partners and so forth.

And hopefully at the appropriate level, we are getting response, whether that is a technical-level response, an authority-level response, or some other mechanism that needs to be put in place to assist. So ultimately the response comes through partnerships and communications on up.

Ms. LAWRENCE. Thank you. Thank you for your indulgence, Mr. Chair.

Mr. BUCK. The chair thanks the gentlelady from Michigan, and recognizes the gentleman from Texas.

Mr. HURD. Thank you, Mr. Chairman, and I appreciate our panelists being here today.

Dr. Reaser, in your opening remarks, I appreciate how you brought a context to this issue in how it is a national security issue. That is something, you know, I know a little something about. I spent 9 years as an undercover officer in the CIA chasing al Qaeda and the Taliban, you know, Iranian and IRGC Quds force. And it is great being able to use those talents and experience, you know, going after invasive weeds and worms. It is an important issue to the State of Texas. In Texas we are dealing with the branched broomrape. We are dealing with the Old World boll worm. We are dealing with cheatgrass as well.

And, you know, we have talked here today, and I guess my first question is more a philosophical question. We have talked here today about how invasive species pose one of the greatest threats to the agriculture industries in the world, yet are the least funded and recognized. How can we change this mentality to become more proactive in protecting our industries?

Ms. REASER. Thank you for the question. I think it is a really good one, and something that deserves a lot more time than what we have available to us. I think one of the challenges that has existed within this issue in the agricultural context is the long history of using the word "pest" and "weeds," which do not galvanize the public's emotive response to this issue.

A lot of people equate "weeds" to dandelions, which are in their background and they do not feel are particularly threatening. The invasive species issue itself, because of examples that have been emerging from around the world, is getting more of the public's perspective on the real risks associated with these non-native organisms, impacting them personally.

And I think as we raise the profile of this issue, as we communicate case studies effectively, as we draw the relationships between these individual species and people's personal lives, whether that be in the agricultural context or otherwise, we will see addi-

tional calls for support in all sorts of ways—financial, technical, and otherwise.

The human dimensions of this issue are of particular interest to me, and I would love to have a side conversation with you at another date if that is of interest to you.

Mr. HURD. It is of interest, and I appreciate that. And also in some of the specifics not only in how do we educate, you know, folks about how critical of an issue this is, the Old World boll worm poses a significant threat to corn, cotton, and other important crops throughout the U.S. And given that it reached Brazil and Puerto Rico, and that in June of this year one worm was found in Florida, is there a Federal protocol in place for an effective response to eliminate any isolated infestations before the pest spreads and becomes established in the U.S.?

Ms. REASER. Thank you for the question. I am not an expert on that species in particular. I know that USDA has been working on eradicating the Texas boll weevil, if, in fact, we are talking about the same species, and that that work has been mostly successful. I would like to follow up with you more specifically at a later date when I can get the specifics in front of me.

Mr. HURD. Great. I appreciate that and would welcome that. And my last question, there has been some conversations already on cheatgrass. The latest research suggests that targeting grazing and optimum times, either before the seed polyps develop or after they drop, produces recurrence on rangelands more than anything else we have tried. An given the tremendous wildfire issues and detrimental effects of sage grouse habitat associated with cheatgrass, should not research like this be a priority, and what are agencies doing to coordinate their efforts to streamline unnecessary environmental reviews for pilot projects and trials?

Ms. REASER. So, two different answers. Thank you for the questions. In terms of the grazing question in particular, there are nuances to the grazing that need to be looked at from a research perspective. There are a number of criteria that go into determining whether grazing is an effective technique in terms of managing cheatgrass. Those relate to the history of the land use, in particular, the condition of the land.

The micro climate that you are looking at, whether you are talking about grazing with cattle versus sheep, the density of the animals, even the breed of the animals, can make a difference in terms of grazing habits. So there is various work going on to look at best possible strategies for managing cheatgrass, and they may vary across and likely will vary across the landscape.

To get to the second part of your question, which I am going to ask you to repeat.

Mr. HURD. Sure. It is, you know, what are agencies doing to coordinate efforts to streamline unnecessary environmental reviews for pilot projects and initial trials?

Ms. REASER. Great. Apologies. Thank you for that. One of the priorities that emerged out of the Western Invasive Weed Summit that I attended two weeks ago was streamlining the NEPA process. This has been a priority for us for a number of years at this point in time, and we are going to continue to move ahead on looking at

what we could do to provide better NEPA guidance and streamlining in the invasive species context into the New Year.

Mr. HURD. Mr. Chairman, I yield back the time I do not have. [Laughter.]

Mr. BUCK. The chairman thanks the gentleman from Texas, and recognizes the gentlelady from the Virgin Islands.

Ms. PLASKETT. Thank you. Thank you so much. I just wanted to go back to something that we were talking about, and that the ranking member, Ms. Lawrence, brought up. When you talked about this is layering, and the responses that come from the local level, to the State level, to the Federal level. You also talked about the management plan, and I know it is the specific task and the mandate of this group to really set those kind of guidelines and those prioritizations out.

Can you give me an example of how this has worked in some of these invasive species? In your written testimony you talked about the Asian carp. You talked about cheatgrass. You know, we have given the example about the lionfish. How has this worked to address some of these issues on some of these specific invasive species issues?

Ms. REASER. Thank you for the question. You are particularly interested in the coordination mechanisms and the —

Ms. PLASKETT. Well, I am just trying to find out some specificity because I just hear a lot of very general discussion about how the process works, and that the management plans are there to make this happen. But I have not heard—maybe it was done—what specific examples you have of where this has worked and where the organization, when this group has actually made it effective against some of these invasive species.

Ms. REASER. Okay. So I want to clarify once again that the National Invasive Species Council is itself the Secretary's and administrators of the 13-member Federal Department. So when we start moving onto discussions about impacts on the ground, we are looking at the engagement at the Agency level and Agency personnel.

Ms. PLASKETT. Right, but you set those. You set those priorities in that national plan and the management of how that is going to be done, is that not right, in your coordination of all of these agencies.

Ms. REASER. The management plan sets out a series of actions to be taken over the life of the management plan.

Ms. PLASKETT. And the management plan is how, in fact, these agencies are going to attack these invasive species issues, right?

Ms. REASER. The management plan sets out goals and objectives for achieving certain things. It is not prescriptive in telling the agencies how specifically to move forward on that particular action.

Ms. PLASKETT. But it sets out guidelines for these agencies on how this is supposed to be done? That is a yes or a no. Does it?

Ms. REASER. It sets out priority actions. It does not explicitly set out guidelines.

Ms. PLASKETT. So in setting the priorities for them, can you give me an example of how those priorities have not been set since this group has been made, how it has been effective in the invasive species fight?

Ms. REASER. Okay. So I can give you a specific example for what is happening on the ground right now within the work that is being done on cheatgrass. Under a second —

Ms. PLASKETT. Is that the only way you are able to tell me what it is working on? You are not able to tell me what has been done and what has been effective in the past as yet?

Ms. REASER. I can go through a number of action items in the plan. There are 170 various action items, and I can go through with you at a later date —

Ms. PLASKETT. Are there too many action items?

Ms. REASER. Pardon?

Ms. PLASKETT. Are there too many action items maybe? If I give my kids too many chores, they will never get any of them completed.

Ms. REASER. I understand your concern with the number of activities and the action items, and I can assure you in the next management plan —

Ms. PLASKETT. I am not concerned. You just cited so many of them as a reason you are not able to tell me which ones they have completed.

Ms. REASER. Well, I can pull out the two management plans at the moment, and I could go through them with you. We do not have time obviously to do that right now. It is something we could sit down and do together.

Ms. PLASKETT. I just asked for one example.

Ms. REASER. So one example in the management plan was to provide resources to develop an international infrastructure for sharing information on invasive species. A number of activities actually have taken place to result in that. The Global Invasive Species Information Network was created that is housed by the U.S. Geological Survey.

We have also contributed resources to setting up a global database. You could call it a global encyclopedia through an organization known as CAVI. That provides information that can be used in the agricultural sector, in the environmental sector, and otherwise to inform decision making, such as risk analyses and risk assessments on the invasive species issue.

Ms. PLASKETT. And any of these, have you been able to show where the action items, the action that has been taken, has actually scaled back the invasive species, or what the impact that those have had on the particular areas that they have affected?

Ms. REASER. At this point in time, without actually going to the agencies and asking for that particular data —

Ms. PLASKETT. Can you ask? That is the ultimate goal of the group. Would that not be something that you would know immediately to be able to say that what you have been working on all these years, this is the outcome and this is how we have been able to beat back this national crisis, this national security issue?

Ms. REASER. I understand your concern, and if the management plan action items were specifically targeted towards an on the ground response, that would be feasible, and I can collect that information.

Many of the items in the management plan are actually focused on enhancing coordination, cooperation, efficiencies, and resource spending, partnerships with States and tribal governments.

Ms. PLASKETT. And is not all of that the ultimate goal to eradicate the invasive species?

Ms. REASER. They are all creating the enabling environment to allow that to happen.

Ms. PLASKETT. Dr. Reaser, that is just yes or no. Is not that the ultimate goal of the organization is to do that?

Ms. REASER. The ultimate goal of —

Ms. PLASKETT. Yes? No?

Ms. REASER.—the National Invasive Species Council is to facilitate coordination and cooperation of specific duties that are outlined in the executive order.

Ms. PLASKETT. To what end?

Ms. REASER. Ultimately to the end of preventing, and controlling

Ms. PLASKETT. So the answer would be —

Ms. REASER.—and eradicating invasive species. However, the activities are often many steps removed from what is happening on the ground. So the ability to say we have created an invasive species database is creating an enabling environment to enable people on the ground, whether that is cheatgrass, or zebra mussels, or weevils in Texas, to make a difference.

However, being able to say that the data in that database directly resulted in 300 infestations being intercepted in the field is understandably quite difficult.

Ms. PLASKETT. Thank you. Thank you, Mr. Chair.

Mr. BUCK. The chair thanks the gentlelady from the Virgin Islands, and recognizes the gentleman from Alabama.

Mr. PALMER. Thank you, Mr. Chairman, and I would like to thank the witnesses for being here and for their testimony.

I have got a question about how some of these invasive species enter the country, and I just want to ask, Dr. Reaser, I know that the Department of Agriculture and Department of Interior are involved. But is there an ongoing discussion about, for instance, sportsmen have brought in certain plants that they think are good for wildlife that have turned out not so well. This has been the case in Alabama.

And I think as we talk about how to deal with the invasive species who are already here, we need to be talking about how we can prevent some of them from being brought into the country. Can you tell me what kind of activity takes place, what kind of discussions, what kind of strategic planning is going on to prevent that?

Ms. REASER. Thank you for the question. We generally discuss these in the context of pathway interdiction and prevention at the border. And I am sure you are well aware, there are numerous controls in place at our ports of entry both on the agricultural side and on the wildlife and human health side to intercept organisms before they come into the States. There also are mechanisms in place to interdict various pathways by which organisms may be introduced, whether that is through horticulture or other means.

One of the ways in which we are adding value at this point in time is to increase our capacities for risk analysis, our ability to

look at species before they come to the United States, and determining what is the likelihood of those organisms being harmful if they arrive here so that we can proactively make choices about which species to let in and which species to prohibit.

Mr. PALMER. When these things are brought in, and there was, I think, it is an Asian version of oak trees that was brought in that a lot of people thought was a great idea for deer and wild turkey, have now decided that it is not. Is there any effort to limit the introduction of something like that so that you have got a 5-, 10-year period to determine if it is problematic? What is the process?

Ms. REASER. So ideally, risk analyses are informed by the best available science that you have. They also take other values and economic concerns into consideration. So if that or any organism became an issue of concern for importation into the United States, a risk analysis could take place, and it could determine based on the output of that risk analysis whether there were reasons to prohibit that organism, whatever it happened to be, and authorities in place to then follow up with the prohibition.

Mr. PALMER. In the South, we have had to deal with an invasive species called kudzu. But we have also been dealing with an invasive weed called Cogon grass, and I think it came into the country as packing material. And, again, it gets back to the collaboration between the various Federal agencies and departments of government to make sure that if we bring something in, that it does not have the capacity, first of all, to reproduce, which I think that surprised a number of people when that happen.

But in that regard, Dr. Beck, you are the weed specialist. What impact does the NEPA process have on the efforts to control the spread of invasive weeds like cheatgrass, and is it helping or hurting these efforts, or other things like cogon grass, for instance?

Mr. BECK. My apologies. I did not hear the one word. My hearing is horrible. NEPA you said?

Mr. PALMER. Right, NEPA. N-E-P-A.

Mr. BECK. My experience personally with NEPA is with working with others that have had to do battle with them, and I guess that is the term that they would prefer to use. It can be an onerous process. It is by design meant to be thorough, but one does not have to take 10 years to make a decision.

I think the process is good when it is used as it is supposed to be used, but unfortunately we run into situations where there seems to be a lot of misuse. In other words, the people who are making the assessment simply do not want something coming in, or they do not care, and it go could go either way. NEPA is a problem that needs to be addressed and streamlined.

Mr. PALMER. My time has expired. Thank you, Mr. Chairman.

Mr. BUCK. The chair thanks the gentleman from Alabama, and recognizes the gentlelady from Michigan.

Ms. LAWRENCE. I want to thank you all for being here. For my last set of questions, Mr. Cameron, I agree with your suggestion that Congress should direct the Council to furnish us with a short annual work plan to help focus attention on the Council's work. Ms. Reaser, do you have any objection to that suggestion?

Ms. REASER. Thank you for the question, and I appreciate the suggestion that Scott Cameron has brought forward. My request

would be that any reporting be tied into the National Invasive Species Management Plan process so that the reporting on that can happen concurrently with any requests so that we are making sure that we are being efficient in our reporting processes.

The current reporting for the National Invasive Species Management Plan is set at the executive order for 18 months after each management plan. And as we move forward, we intend to report out on that time frame.

Ms. LAWRENCE. I would strongly recommend that as you are working on the plan, that you look at providing us with updates.

I want to ask Dr. Steinman, what can the Federal government do to be helpful in your effort in curbing invasive species in the Great Lakes? What can the Federal government do? I am a little concerned that we have a plan that does not really cause action. It is a plan. So please tell me, what can we do?

Mr. STEINMAN. Well, thank you, Representative Lawrence. It really depends on the vector that we are talking about for introduction because there are so many ways that invasive species can get into the Great Lakes or into any ecosystem. So, again, that coordination is really critical if you are talking about species that are coming in from ballast water introduction. And it is critical that the EPA, the U.S. Coast Guard are all working together, the Canadian government as well as the U.S. government are working to make sure that none of these salties are discharging any of the ballast water organisms that would get in that way.

But in many cases, some of these organisms are being introduced just by unintentional means or through the live aquaculture trade, and that is when USDA needs to come into play. So, again, it gets down to coordination. I know this is a common refrain we have been hearing, not just amongst the Federal government, although that is an important resource for us not just in terms of their management strategies, but in terms of resources, monetary resources. But then working with the State and local agencies as well to make sure that that plan once developed is coordinated and can be implemented in a rigorous way.

Ms. LAWRENCE. Thank you so much. I want the panel to know, Dr. Reaser, that I am looking forward to that report and your leadership, but leadership is needed. All the members who have spoken here, we represent different parts of this country, and the issues that we are talking about, and we covered it. It is economic. It is our water quality. It is recreational. It is jobs. It is our economy. All these things are tied to this.

And it seems like there has been this kind of whatever attitude, and under your leadership, and it is something that is going to be a priority for me as a member of Congress, is that we continue to put the focus and the energy. This is not a job to come in and just kind of sit on the side because nobody cares what you are doing. You have a tremendous background when you talk about your resume, and so you understand the impact of this.

And this hearing to me is important because this is a major impact. You know, I am from the Great Lakes, but you heard Texas. You heard Florida. You heard the Islands. This is something that requires the commitment and the passion, and I am sitting here.

I am looking forward to that leadership. I am going to be actively looking for that report.

And this issue of coordinating the levels of government is extremely important, and I expect for the plan to lay out that process so that we have a process where at least there is a plan where if I am a governor, this is the layers and this is how we move forward, and there is a process for that. So I want to thank you all for you being here and your expertise.

I yield back my time, sir.

Mr. BUCK. The chair thanks the gentlelady from Michigan. And in closing, I would like to thank our witnesses for taking the time to appear before us today.

If there is no further business, without objection, the subcommittee stands adjourned.

[Whereupon, at 4:06 p.m., the subcommittee was adjourned.]

APPENDIX

MATERIAL SUBMITTED FOR THE HEARING RECORD



United States Department of the Interior
 OFFICE OF THE SECRETARY
 Washington, DC 20240

MAR 16 2016

MAR 15 2016

The Honorable Cynthia Lummis
 Chairman
 Subcommittee on Interior
 Committee on Natural Resources
 House of Representatives
 Washington, D.C. 20515

Dear Chairman Lummis:

Enclosed are responses prepared by the Department of the Interior to questions submitted following the Subcommittee's December 1, 2015, oversight hearing on Federal agency coordination on invasive species.

Thank you for the opportunity to provide this material to the Subcommittee.

Sincerely,

A handwritten signature in black ink, appearing to read "Christopher P. Salotti".

Christopher P. Salotti
 Legislative Counsel
 Office of Congressional and Legislative Affairs

Enclosure

cc: The Honorable Brenda Lawrence
 Ranking Member

Ms. Jamie Reaser
Executive Director
National Invasive Species Council
U.S. Department of the Interior

Representative Paul A. Gosar (AZ)
December 1, 2015 Hearing:
Examining Invasive Species Policy

Dr. Reaser, the lower Colorado River is on the front lines battling the Quagga Mussel and the Salt Cedar. The mussels threaten the Hoover Dam, Davis Dam, Parker Dam, Imperial Dam and the Central Arizona Project – all of which are part of my District in Arizona. These water systems supply electricity and drinking water to millions across the Southwest.

While the problem is massive in scale its implications are felt locally and require local action to mitigate their spread. Municipal leaders and community organizations in my district, such as the Lake Havasu Marine Association, are prepared and willing to do their part but need resources to do so.

1. What specific authorizations currently exist for funding mitigation program that combat Mussels or Salt Cedars on a state or local level?

Response: Generally, land management agencies within the Department of the Interior work with state and federal partners to prevent the establishment and spread of quagga and zebra mussels and tamarisk (salt cedar) under both Executive Order 13112 and a variety of statutory authorities. Major authorities include the National Environmental Policy Act, the Endangered Species Act, the Fish and Wildlife Coordination Act, the Lacey Act, the Federal Land Policy Management Act, the Taylor Grazing Act, and the Public Rangelands Improvement Act.

Relevant actions may also be taken under other specific authorities. For example, the Consolidated Natural Resources Act of 2008 authorizes the Secretary of the Interior to enter into agreements with willing cooperators for the purpose of protecting natural resources in units of the National Park System through collaborative efforts on land both inside and outside units of the National Park System. The National Park Service (NPS) has an agreement with the Nevada Department of Wildlife, which has been funded by both NPS and the U.S. Fish and Wildlife Service (FWS), at Lake Mead National Recreation Area for the inspection and cleaning of boats, many of which are encrusted with quagga mussels. The purpose is to reduce the chances of quagga mussels being introduced to other waterbodies via outbound trailered boats.

Additionally, the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 authorizes limited funding, administered by the FWS, to assist state and local efforts to address aquatic invasive species. This act authorizes the development of State and Interstate Aquatic Nuisance Species Management Plans, which are crafted by the states and identify priorities for aquatic nuisance species management within and across State jurisdictions. These plans are

eligible to receive funding from FWS if approved by the Aquatic Nuisance Species Task Force, co-chaired by FWS and the National Oceanic and Atmospheric Administration.

The Bureau of Reclamation (BOR) addresses invasive species issues consistent with its general authority to operate and maintain its projects under the Reclamation Act of 1902 (Act). BOR has authorization and funding pursuant to both the Act and the National Invasive Species Act of 1996 and Executive Order 13112 to participate in coordinating efforts with other federal agencies and the private sector to prevent and control the spread of invasive species, such as mussels and tamarisk. Specific authority and funding were also provided in the American Recovery and Reinvestment Act in 2009, focused on mussel detection at high risk locations. The NPS, FWS, and the Bureau of Land Management (BLM) all work with state and local partners to reduce the spread of invasive species, including tamarisk infestations, under authorities in the Plant Protection Act, including the cooperative agreement authority in section 15 of the Noxious Weed Act and provisions of the Noxious Weed Control Act of 2004, which establishes a program to provide assistance through states to eligible weed management entities to control or eradicate harmful, nonnative weeds on public and private lands.

Through the Partners for Fish and Wildlife Act, FWS also provides funding to partnerships for habitat restoration projects on private lands, which include riparian habitat restoration projects that address salt cedar in several states, including Arizona, California, Utah, and Colorado. The BLM partners with states and other partners under programs such as Challenge Cost Share and the National Fish and Wildlife Foundation's Pulling Together Initiative to enter into cooperative arrangements to accomplish high priority habitat improvement or protection projects, including projects that address mussels or salt cedar.

As you know, the Tamarisk, or Salt Cedar, has also spread throughout the Colorado River basin. It has been especially damaging to areas in Arizona and my district along the Gila River. These invasive and thirsty shrubs steal already limited water to push out native plants, strain agriculture resources, and disrupt economic activity.

In communities where the tamarisk invasion has developed into crisis – like Buckeye, Arizona on the Gila River – local and state leaders have developed action plans to eradicate the shrub and restore natural habitats. However these mitigation plans have either got lost in the complicated web of federal invasive species policy or met flat out resistance by federal agencies.

2. What has the NISC done to engage communities and empower them to leverage local resources and expertise to address problems unique to their area?

Response: NISC is comprised of the secretaries and administrators of 13 federal departments and agencies. It focuses on high-level policy and planning. Within the Department of the Interior, individual agencies have cooperative initiatives with local communities. For example, the BLM in Yuma, Arizona, provides Stewardship Contracting to remove salt cedar along the Colorado River. This contracting opens up new opportunities to work with our partners on long-

term projects. It also allows the BLM to direct any proceeds from selling the by-products of land treatments back into the projects.

Following a 2007 fire and in accordance with the National Fire Plan and the President's Healthy Forest Initiative, the BLM Phoenix District Office began a series of projects to reduce hazardous fuel accumulations and restore degraded habitat caused by salt cedar infestations along the Gila River. Three projects – Buckeye, Robins Butte, and Powers Butte – have treated and restored 273 acres outside of Buckeye, Arizona.

Since 2004, the Barstow Field Office in California has treated nearly 300 acres of tamarisk along the Amargosa River through a partnership with FWS, The Nature Conservancy, a local conservancy, and private landowners on both public and adjoining private lands.

3. Are there programs, special funding, or streamlined policy incentives for Indian Tribes or local entities who partner with Indian tribes to address invasive species problems in their communities?

Response: There are two components to the Bureau of Indian Affairs (BIA) Invasive Species program. The noxious weed program focuses on on-the-ground management and treatment of noxious weeds on trust rangelands. This component provides financial and technical assistance to agencies, tribes, and tribal entities to implement weed control projects on trust rangelands. Competitive funding criteria emphasize cooperative and integrated weed management, local priority species, and Early Detection/Rapid Response. To extend the reach of program funding and to ensure cooperators' commitment, funding requires a minimum of 50 percent non-program cost-share contribution. The program also provides and supports weed awareness training and research into biological control.

This program also provides funding to assist tribes in the management, control, and prevention of invasive species threats that occur outside the realm of agricultural operations. This component of the invasive species program protects important tribal resources such as fisheries, wildlife, clean water, healthy ecosystems, and forest health, by providing tribes with funding to address invasive species issues on a landscape level, through collaboration with existing efforts or by developing their own management strategies where ongoing efforts do not exist. Funding is awarded through a competitive process according to uniform ranking criteria. No matching funds are required for this component of the Invasive Species Program.

Incentives for partnerships exist where tribal resources and public resources intersect, such as ceded areas in the Great Lakes and Pacific NW where off-reservation Treaty rights have been upheld. Resources in the off-reservation co-managed areas provide benefits to both the public and tribes and thus provide a large geographic area where shared interests provide incentive for partnerships.

Ms. Jamie Reaser
Executive Director
National Invasive Species Council
U.S. Department of the Interior

Chairman Cynthia Lummis (WY)
December 1, 2015 Hearing:
Examining Invasive Species Policy

Dr. Reaser, one of the greatest invasive species threats for western states is cheatgrass. This invasive weed increases the risk for wildfires by drying out early in the growing season. It also destroys the native habitat of endangered species, such as the sage grouse. Recent press reports indicate that the Bureau of Land Management is considering the use of biological thinning, or flash grazing, to control cheatgrass. This process uses cattle grazing to reduce cheatgrass and consequently lower the wildfire risk and create space for desirable plants.

1. Does NISC support this method for cheatgrass mitigation and if so, how will NISC support these efforts?

Response: NISC is comprised of the secretaries and administrators of 13 federal departments and agencies. It focuses on high-level policy and planning and does not take positions on methodologies for addressing invasive species because the best practices for addressing invasive species are very context specific. They change among locations and through time. These decisions are best made by the agency personnel working “on the ground.” At the agency level, the BLM has a substantial amount of experience addressing cheatgrass. BLM staff use an Integrated Pest Management/Integrated Vegetation Management approach when addressing cheatgrass. These efforts must combine cultural and physical practices – along with biological and chemical options – in such a way as to minimize potential economic, ecological, and sociological impacts. The recent registration of a biopesticide, the D7 strain of *Pseudomonas fluorescens*, sold under the trade name D7® along with an additional strain ACK55, which is currently under review for registration, offer a unique management tool. Both biopesticides are for the management of three invasive grass species: downy brome/cheatgrass (*Bromus tectorum* L.), medusahead rye (*Taeniatherum caput-medusae* [L.] Nevski), and jointed goatgrass (*Aegilops cylindrica* L.). This past fall, the BLM established plots of the D7® strain of *Pseudomonas fluorescens* in 17 field offices in seven states at a maximum of 50 acres per field study site. In addition to a new potential herbicide active ingredient option, mechanical options have been used for years in addressing this issue. Moreover, timing and various types of equipment have proven to be effective under certain conditions and with different plant species. The BLM is incorporating the use of targeted grazing into the management of several invasive

species, including downy brome/cheatgrass. Researchers are working on identifying ways in which each of these various management options can be incorporated into a management process.

Mr. Scott J. Cameron
President
Reduce Risks from Invasive Species Coalition

Representative Paul A. Gosar (AZ)
December 1, 2015 Hearing:
Examining Invasive Species Policy

Mr. Cameron, in your testimony you describe how some of our invasive species threats arose as unintended consequences of government policies.

1. Could you give us an example of how this has occurred and how we can work to avoid this in the future?

Response: Several invasive plants were initially promoted by the US Department of Agriculture (USDA) because they were thought to be effective in reducing soil erosion, as was the case with salt cedar, which was originally conceived as a windbreak, as well as being valued as an ornamental plant. Kudzu was also initially promoted by USDA in the Southeast to reduce soil erosion. These species eventually proved to be prolific and outcompeted native plants, creating economic and ecological problems in the process that greatly outweighed any benefits they might have originally produced.

For many years, state and federal fisheries agencies stocked gamefish native to one area of the country to other areas where they were not native in order to replace native fisheries destroyed by dams, or compensate for other manmade hydrological changes. Sometimes the fish were simply introduced because they were popular sportfish in other areas of the country. While this stocking produced recreational fishing benefits, it also sometimes led to the decline of native fish species already stressed by hydrological changes. An example would be stocking east coast striped bass into Western manmade reservoirs or river systems, where they are such effective predators that they imperil efforts to recover endangered species of fish native to those ecosystems. Specifically, striped bass introduced many years ago by federal and California fishery agencies are eating young endangered Pacific salmon and Delta smelt in the San Francisco Bay-Delta, at the same time that California's Central Valley farmers and southern California cities are being deprived of water by the federal government in an effort to save the very same smelt and salmon from extinction that the now invasive striped bass are eating. Congress could explore why the US Fish and Wildlife Service is not holding the State of California responsible for jeopardizing endangered salmon and Delta smelt by failing to issue fishery regulations that would drive down the striped bass population in the Bay-Delta.

Most of these government mistakes happened in the last century, when our knowledge of ecosystem dynamics was far less sophisticated than it is today. Most federal and state agencies are now very careful, perhaps excessively careful, about avoiding introducing new exotic species into North America for fear they may prove invasive. In fact, the errors typically being made by federal agencies are now errors of omission rather than commission.

For instance, USDA's Animal and Plant Health Inspection Service is being too slow to approve potentially effective biocontrol agents, which are foreign bugs not yet in the US that kill or parasitize proven invasive foreign bugs or plants that are already here. The agencies fear that the foreign predators or parasites may ultimately have impacts on other non-invasive species. This fear is not unreasonable, but adequate research and risk assessment can reduce the risk dramatically. In the meantime, the species already here that are proven to be invasive continue to run amuck, causing ecological and economic damage.

Another example of a federal agency's detrimental failure to act is the US Fish and Wildlife Service's glacially slow, almost geologically slow, pace in listing widely known invasive species of animals as injurious under the Lacey Act. Such a listing would ban international commerce and interstate transportation of the injurious species. The FWS has taken so long, often years, to issue the necessary regulations to list injurious species, that Members of Congress, including those who generally consider themselves to be skeptical of new federal regulation, have in desperation introduced legislation to list species by Act of Congress that FWS can't seem to get around to listing through the regulatory process. FWS ought to be given statutory deadlines to issue regulations under the Lacey Act, and industry or environmental groups whose interests are harmed by delays in listing ought to be allowed to sue the agency to force it to meet its regulatory obligations on a timely basis. This strategy has proven dramatically successful for the environmental community, which regularly sues to force listings under the Endangered Species Act; perhaps it could work equally effectively for a different group of stakeholders under the Lacey Act.

House Committee on Oversight and Government Reform
December 1, 2015 Examining Invasive Species Policy
Questions Directed to George Beck
From The Honorable Paul A. Gosar

1. We know that the purpose of the NISC is to help facilitate the mitigation to reduce the threat posed by invasive species. From your research and understanding of the NISC process, do federal policies sometimes hinder the efforts of State and Local entities to mitigate invasive species in their communities?

Dear Representative Gosar:

Yes, Federal policies often hinder the efforts of State and Local entities to effectively manage invasive species. Each Federal agency approaches its responsibilities with regard to invasive species management independently and frequently not in concert with State and Local governments and private land owners. Operating independently can be advantageous as each land management agency has particular goals and objectives but not working in concert with local entities is foolhardy and irresponsible. For example, interpretation of NEPA requirements relative to approving the use of new and more effective tools, such as newly developed herbicides, translates into very different time frames as to when individual agencies approve the use of the new tool or process. Instead of depending upon EPA to provide such guidance in the form of a Federal label for that product, as is the case for private landowners and State and Local governments, each agency follows its own process and procedures to approve the new tool or process and this often leaves personnel from those agencies that take excessively long approval periods at a huge disadvantage relative to other local land owners and land managers that already are using that tool because EPA's assessment through FIFRA is sufficient. NEPA cannot and should not be ignored but it never should be used as an excuse to avoid managing invasive species nor should the process cause excessive delays. It has always puzzled me that the Forest Service can clear the NEPA hurdles quickly – often in 1 year - yet the Bureau of Land Management takes much longer ... up to 10 years or more to approve such use. A specific example serves to make this point; about 15 years ago I met with the San Miguel County Weed Supervisor (southwest Colorado), personnel from the Colorado Division of Wildlife, and personnel from the BLM. The focal point was a relatively small parcel of land managed by the Colorado Division of Wildlife but literally surrounded by BLM-managed land. This parcel was badly infested with cheatgrass and CDOW was planning on using a new herbicide – Plateau – to control the cheatgrass but their efforts would have been wasted because the BLM had yet to approve the use of Plateau on BLM lands, which at that time was the best solution for cheatgrass. The lack of BLM approval was clearly to the chagrin of the BLM personnel that were present and they were obviously troubled by their inability to act effectively in this case. This example was brought to the attention of upper management in the BLM to no avail.

It is not entirely bad that agencies operate independently on land management issues but the NEPA process mentioned above is symptomatic of the larger issue of poor leadership within the Departments of Agriculture, Commerce, and Interior concerning invasive species management.

Communication is at the heart of this issue much less appropriate respect for this insidious land management problem. Invasive species must not be ignored as they all will expand to reach the impact that cheatgrass has on western ecosystems. Shoring up NISC and attempting to force them to be better engaged will not solve the invasive species problem. The solution is legislative action by Congress – H.R.1485/S.2240 The Federal Land Invasive Species Control, Prevention, and Management Act.

2. What can NISC do to better leverage the resources and expertise of State and Local entities in invasive species management?

Dear Representative Gosar:

In a perfect world, the NISC Co-chairs – the Secretaries of Agriculture, Commerce, and Interior – would jointly meet with Governors throughout the U.S. to open the dialogue as to how to better manage invasive species collaboratively including the leveraging of Federal resources. NISC has had 15 years to make such an effort, which has never happened and I do not think it ever will happen. NISC is not the solution to our country's invasive species problem because all that has transpired over the past 15 years is creation of a bureaucracy that is actually interfering with Federal agency efforts to manage invasive species. Well-meaning NISC staff members have created paperwork nightmares for the Federal agency personnel that interact directly with NISC staff, which then hinders the ability of those agency personnel to complete their jobs, and progress is halted. NISC believes themselves to be the overseeing body for Federal government invasive species management but agencies seem to disagree, which is justifiable given the latter are making the on-the-ground effort to work with local entities to prioritize and solve invasive species problems. It is imperative that local entities – State and Local governing bodies and private land owners – make the priority decisions about invasive species management in their communities and the Federal government should be engaged in the discussion to learn what they must do to work in concert with those local entities. Federal efforts must complement local efforts and NISC has proven itself incapable of doing so; their tendency is to force their policies onto Federal agencies rather than allow Federal agency policies to adapt to local efforts. Simply put, NISC should be dissolved and the budget used to operate that body be re-allocated to the on-the-ground invasive species management effort. NISC is NOT the solution to the invasive species problem in the United States – they are part of the problem. The solution is to make H.R.1485/S.2240, The Federal Land Invasive Species Control, Prevention, and Management Act, the law of the land as this will provide Federal land management agencies with a coordinated and collaborative framework to work in concert with State and Local entities to resolve the invasive species problem throughout our country.

